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MARCH 1947

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MONTHLY WEATHER REVIEW

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MARCH 1947

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METEOROLOGICAL AND CLIMATOLOGICAL DATA FOR MARCH 1947

AEROLOGICAL OBSERVATIONS

[For description of change in Table 1 and charts, see REVIEW, January 1946, p. 6]

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1947*

STATIONS AND MEAN SURFACE PRESSURES

Standard pressure surface (mb.)	Albany, N. Y. (999.4 mb.)				Albuquerque, N. Mex. (834.1 mb.)				Apalachicola, Fla. (1,016.5 mb.)				Atlanta, Ga. (980.7 mb.)				Auburn, Calif. (957.4 mb.)				Big Spring, Tex. (925.8 mb.)				Bismarck, N. Dak. (957.6 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	86	−0.9	78	31	1,620	9.8	34	31	5	13.1	82	31	300	7.0	67	31	501	11.0	76	30	774	9.9	57	31	505	−3.6	75
1,000	31	80	(*)	----	31	82	(*)	----	31	143	13.3	78	31	138	(*)	----	31	134	(*)	----	30	124	(*)	----	31	160	(*)	----
950	31	490	−2.9	77	31	527	(*)	----	31	578	11.8	68	31	566	6.2	65	31	568	11.5	74	30	556	(*)	----	31	570	−4.7	75
900	31	915	−5.8	82	31	987	(*)	----	31	1,025	9.9	58	31	1,002	3.9	67	31	1,017	9.7	66	30	1,008	9.8	55	31	992	−6.4	77
850	31	1,360	−8.6	84	31	1,462	(*)	----	31	1,498	8.2	48	31	1,465	2.2	63	31	1,489	7.4	59	30	1,481	8.0	52	31	1,436	−9.1	82
800	31	1,828	−11.1	82	31	1,965	7.8	36	31	1,997	6.1	45	31	1,954	.5	56	31	1,986	4.0	58	30	1,980	7.2	42	31	1,904	−10.3	73
750	31	2,325	−13.4	76	31	2,496	4.0	38	31	2,528	3.7	42	31	2,474	−1.6	48	31	2,511	.6	56	30	2,513	4.4	38	31	2,405	−12.2	61
700	31	2,844	−15.7	68	31	3,050	−.4	42	31	3,081	1.3	34	31	3,017	−4.2	48	31	3,057	−2.8	51	30	3,067	.9	36	31	2,925	−14.4	54
650	31	3,405	−18.3	65	31	3,641	−5.2	48	31	3,677	−1.2	35	30	3,600	−7.2	45	31	3,642	−6.5	46	30	3,658	−3.1	36	31	3,490	−17.1	54
600	31	3,994	−21.2	----	31	4,260	−10.2	56	31	4,308	−4.9	----	30	4,216	−10.6	----	30	4,261	−10.5	43	30	4,287	−7.5	40	31	4,081	−20.0	55
550	31	4,630	−24.9	----	31	4,928	−14.9	56	31	4,989	−9.3	----	29	4,879	−14.5	----	30	4,923	−15.2	44	30	4,959	−12.0	39	31	4,720	−23.7	----
500	31	5,318	−28.9	----	31	5,638	−19.9	49	31	5,716	−13.7	----	29	5,594	−19.1	----	30	5,638	−20.4	44	30	5,681	−17.2	42	31	5,412	−28.1	----
450	29	6,073	−33.3	----	31	6,417	−25.0	----	30	6,513	−18.7	----	29	6,375	−24.7	----	30	6,413	−25.9	----	30	6,468	−22.7	----	29	6,171	−32.5	----
400	27	6,878	−38.8	----	31	7,257	−31.3	----	29	7,377	−24.8	----	28	7,216	−30.8	----	30	7,253	−32.1	----	30	7,317	−28.6	----	28	6,986	−38.3	----
350	27	7,783	−44.2	----	30	8,185	−38.2	----	28	8,330	−31.5	----	28	8,151	−37.1	----	29	8,184	−39.3	----	29	8,261	−35.0	----	25	7,897	−44.2	----
300	26	8,810	−49.7	----	30	9,229	−45.4	----	26	9,411	−39.2	----	26	9,198	−44.3	----	28	9,217	−47.3	----	28	9,321	−41.8	----	21	8,928	−50.7	----
250	25	9,994	−53.3	----	27	10,436	−52.7	----	25	10,634	−48.8	----	26	10,401	−50.6	----	26	10,410	−55.9	----	22	10,517	−49.3	----	10	10,091	−56.2	----
200	25	11,430	−53.3	----	14	11,821	−56.3	----	24	12,075	−58.3	----	25	11,833	−56.6	----	24	11,804	−61.9	----	15	11,934	−54.8	----	----	----	----	----
175	22	12,289	−52.5	----	9	12,690	−55.6	----	22	12,889	−60.9	----	22	12,659	−57.4	----	21	12,633	−61.8	----	6	12,864	−55.8	----	----	----	----	----
150	20	13,287	−52.9	----	5	13,755	−54.8	----	18	13,881	−62.3	----	16	13,625	−58.6	----	15	13,582	−58.5	----	----	----	----	----	----	----	----	----
125	16	14,445	−52.8	----	----	----	----	----	9	15,022	−66.3	----	12	14,750	−60.3	----	11	14,728	−59.4	----	----	----	----	----	----	----	----	----
100	6	15,838	−52.7	----	----	----	----	----	----	----	----	----	7	16,115	−62.1	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Boise, Idaho (914.8 mb.)				Brownsville, Tex. (1,013.9 mb.)				Buffalo, N. Y. (984.2 mb.)				Caribou, Maine (984.0 mb.)				Charleston, S. C. (1,014.4 mb.)				Ciudad Victoria, Mexico (972.5 mb.)				Columbia, Mo. (988.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	808	7.6	64	31	6	16.9	79	30	221	−1.8	83	31	191	−4.1	83	31	14	8.3	75	30	335	22.3	49	29	239	1.7	69
1,000	31	122	(*)	----	31	124	16.7	79	30	93	(*)	----	31	61	(*)	----	31	131	8.5	69	30	90	(*)	----	29	142	(*)	----
950	31	557	(*)	----	31	566	15.1	74	30	506	−3.3	79	31	472	−3.9	72	31	539	7.6	64	30	530	21.2	50	29	559	.8	65
900	31	1,002	8.9	56	31	1,018	14.3	60	30	927	−6.0	80	31	893	−6.3	74	31	1,000	5.8	60	30	1,004	17.4	55	29	988	−1.7	72
850	31	1,474	6.1	54	31	1,500	13.3	48	30	1,372	−8.9	82	31	1,338	−9.0	75	31	1,466	4.2	50	30	1,489	14.0	61	29	1,441	−3.9	68
800	31	1,967	2.3	58	31	2,009	11.9	39	30	1,839	−11.2	77	31	1,805	−11.5	67	31	1,958	2.0	46	30	1,999	11.8	58	29	1,918	−5.4	63
750	31	2,485	−1.3	60	31	2,550	10.3	25	30	2,339	−13.6	73	31	2,303	−13.9	65	31	2,483	−.3	43	30	2,542	10.5	47	29	2,428	−7.5	61
700	31	3,031	−5.0	60	31	3,118	7.3	24	30	2,854	−15.5	60	31	2,818	−16.5	66	31	3,025	−2.9	40	30	3,111	8.4	41	29	2,957	−9.8	60
650	31	3,613	−9.0	59	30	3,725	3.6	23	30	3,422	−17.8	57	31	3,379	−19.4	63	29	3,613	−5.6	----	29	3,720	4.3	31	29	3,535	−12.6	56
600	31	4,225	−13.0	59	30	4,367	−.8	24	30	4,007	−21.0	----	31	3,963	−23.0	----	29	4,231	−8.6	----	29	4,366	−.7	33	29	4,133	−15.9	52
550	31	4,884	−17.3	62	30	5,056	−5.5	----	30	4,648	−24.9	----	29	4,601	−26.3	----	29	4,902	−13.1	----	29	5,054	−5.4	33	29	4,787	−20.0	49
500	31	5,589	−22.3	----	30	5,796	−10.7	----	30	5,332	−29.2	----	29	5,283	−30.4	----	28	5,626	−17.7	----	28	5,798	−9.9	----	29	5,485	−24.5	----
450	31	6,361	−27.8	----	30	6,601	−16.0	----	30	6,087	−34.1	----	29	6,031	−35.1	----	27	6,409	−23.3	----	26	6,609	−14.7	----	28	6,257	−29.5	----
400	31	7,192	−34.0	----	30	7,475	−22.1	----	30	6,893	−39.1	----	28	6,841	−40.7	----	27	7,255	−29.4	----	25	7,490	−20.9	----	28	7,081	−35.3	----
350	31	8,111	−41.7	----	30	8,443	−29.0	----	30	7,797	−44.6	----	27	7,740	−46.3	----	27	8,196	−35.6	----	25	8,464	−28.2	----	28	7,998	−41.9	----
300	31	9,138	−49.7	----	29	9,531	−36.8	----	29	8,812	−49.7	----	25	8,751	−51.7	----	27	9,253	−42.1	----	25	9,552	−36.4	----	27	9,035	−48.1	----
250	31	10,309	−57.5	----	28	10,769	−45.5	----	28	9,995	−51.8	----	24	9,920	−54.3	----	27	10,467	−49.5	----	21	10,813	−45.6	----	21	10,243	−53.6	----
200	27	11,691	−61.7	----	24	12,231	−54.8	----	21	11,406	−50.0	----	17	11,344	−54.0	----	23	11,897	−56.8	----	12	12,300	−54.8	----	12	11,671	−54.4	----
175	10	12,438	−57.4	----	16	13,087	−58.3	----	19	12,261	−49.5	----	12	12,182	−51.7	----	17	12,736	−58.5	----	9	13,124	−59.8	----	7	12,560	−53.7	----
150	7	13,403	−56.8	----	9	14,089	−61.7	----	17	13,255	−49.9	----	9	13,185	−50.5	----	14	13,687	−59.0	----	----	----	----	----	6	13,583	−54.9	----
125	----	----	----	----	5	15,231	−64.8	----	12	14,447	−49.3	----	----	----	----	----	6	14,792	−59.7	----	----	----	----	----	----	----	----	----
100	----	----	----	----	----	----	----	----	5	15,902	−51.0	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

Standard pressure surface (mb.)	Dodge City, Kans. (924.0 mb.)				El Paso, Tex. (879.3 mb.)				Ely, Nev. (806.9 mb.)				Fort Worth, Tex. (991.6 mb.)				Glasgow, Mont. (942.0 mb.)				Grand Junction, Colo. (849.9 mb.)				Great Falls, Mont. (886.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	30	787	2.9	70	31	1,195	14.3	33	31	1,908	4.0	52	31	211	10.0	63	31	648	−7.0	83	31	1,474	4.3	48	31	1,128	−2.6	74
1,000	30	136	(*)	----	31	91	(*)	----	31	121	(*)	----	31	140	(*)	----	31	173	(*)	----	31	112	(*)	----	31	156	(*)	----
950	30	562	(*)	----	31	542	(*)	----	31	556	(*)	----	31	570	9.1	59	31	581	(*)	----	31	553	(*)	----	31	577	(*)	----
900	30	999	3.4	64	31	1,004	(*)	----	31	1,008	(*)	----	31	1,012	6.3	63	31	1,003	−6.3	82	31	1,003	(*)	----	31	1,010	(*)	----
850	30	1,462	1.4	64	31	1,481	13.6	31	31	1,480	(*)	----	31	1,480	5.2	56	31	1,449	−6.9	80	31	1,472	7.3	41	31	1,459	−2.0	70
800	30	1,949	−.2	60	31	1,987	9.5	34	31	1,979	5.0	49	31	1,974	4.1	49	31	1,921	−8.4	72	31	1,970	4.9	52	31	1,939	−4.0	68
750	30	2,466	−2.9	58	31	2,523	5.5	36	31	2,508	1.8	50	31	2,500	1.4	46	31	2,424	−10.7	66	31	2,493	.7	52	31	2,450	−6.3	74
700	30	3,006	−5.9	51	31	3,078	1.2	37	31	3,055	−2.7	58	31	3,049	−2.2	47	31	2,948	−13.6	66	31	3,042	−3.8	62	31	2,981	−9.9	77
650	30	3,587	−9.4	51	31	3,672	−3.2	42	31	3,637	−7.3	65	31	3,635	−5.8	47	31	3,513	−16.2	62	31	3,623	−8.5	70	31	3,555	−13.4	77
600	30	4,197	−13.6	54	31	4,297	−7.4	38	31	4,256	−11.8	65	31	4,257	−9.6	46	31	4,107	−19.6	57	31	4,238	−13.3	69	31	4,154	−17.1	71
550	30	4,850	−18.1	58	31	4,971	−12.1	----	31	4,918	−16.0	57	31	4,926	−13.9	43	31	4,748	−23.6	----	31	4,895	−17.6	61	31	4,803	−21.4	----
500	30	5,558	−22.7	----	31	5,691	−17.4	----	31	5,629	−20.6	49	30	5,646	−18.2	----	31	5,438	−28.1	----	30	5,603	−22.6	----	31	5,497	−26.4	----
450	30	6,328	−28.1	----	31	6,474	−23.2	----	31	6,404	−26.2	----	29	6,429	−23.7	----	31	6,191	−33.0	----	29	6,381	−27.6	----	31	6,256	−32.0	----
400	30	7,157	−34.5	----	31	7,323	−29.2	----	31	7,241	−32.6	----	28	7,278	−29.6	----	30	7,008	−38.8	----	28	7,204	−34.0	----	31	7,072	−38.2	----
350	30	8,076	−41.3	----	30	8,265	−35.8	----	31	8,168	−39.8	----	27	8,217	−36.7	----	30	7,910	−45.5	----	28	8,133	−41.0	----	31	7,976	−45.1	----
300	29	9,107	−48.3	----	30	9,317	−43.1	----	30	9,200	−47.6	----	27	9,267	−44.0	----	28	8,927	−52.5	----	23	9,157	−48.4	----	31	8,999	−52.3	----
250	26	10,283	−55.4	----	29	10,520	−51.3	----	29	10,387	−55.4	----	27	10,470	−51.3	----	26	10,081	−57.3	----	21	10,335	−55.4	----	31	10,150	−58.5	----
200	23	11,700	−57.2	----	22	11,944	−57.6	----	18	11,758	−61.5	----	23	11,914	−56.4	----	21	11,507	−57.1	----	8	11,712	−56.8	----	25	11,549	−60.3	----
175	22	12,544	−57.0	----	12	12,809	−59.9	----	11	12,558	−58.0	----	14	12,797	−58.4	----	16	12,340	−53.8	----	----	----	----	----	9	12,360	−58.1	----
150	18	13,517	−56.9	----	6	13,801	−59.9	----	----	----	----	----	7	13,692	−58.9	----	10	13,329	−53.5	----	----	----	----	----	----	----	----	----
125	9	14,702	−58.2	----	----	----	----	----	----	----	----	----	5	14,841	−60.8	----	8	14,534	−53.5	----	----	----	----	----	----	----	----	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1947*—Continued

Standard pressure surface (mb.)	Greensboro, N. C. (982.7 mb.)				Hatteras, N. C. (1,014.6 mb.)				Havana, Cuba (1,010.6 mb.)				Honolulu, T. H. (1,016.8 mb.)				Huntington, W. Va. (965.8 mb.)				International Falls, Minn. (974.4 mb.)				Joliet, Ill. (994.5 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	273	3.4	67	31	3	7.6	77	26	50	20.8	80	31	3	24.4	63	30	172	−0.9	71	31	360	−6.1	74	30	178	−0.9	78
1,000	31	130	(*)	----	31	122	7.4	72	26	141	20.8	79	31	149	22.5	66	30	138	(*)	----	31	154	(*)	----	30	134	(*)	----
950	31	551	3.0	58	31	547	5.4	63	26	587	17.9	78	31	596	18.7	70	30	552	.1	63	31	558	−5.9	72	30	541	−2.3	68
900	31	984	.5	59	31	983	3.0	62	26	1,046	15.5	69	31	1,055	15.3	75	30	981	−3.1	69	31	979	−8.5	77	30	969	−5.4	73
850	31	1,441	−1.7	62	31	1,444	.4	63	26	1,530	13.7	56	31	1,538	12.3	72	30	1,431	−5.6	71	31	1,420	−10.9	79	30	1,415	−7.7	72
800	31	1,922	−3.8	60	31	1,928	−1.7	57	26	2,039	12.0	42	31	2,045	10.7	56	30	1,905	−7.7	69	31	1,884	−12.6	70	30	1,885	−9.7	61
750	31	2,434	−6.2	58	31	2,445	−4.1	53	26	2,583	9.6	----	31	2,587	9.1	38	30	2,408	−9.6	64	31	2,379	−14.7	65	30	2,384	−12.0	62
700	31	2,967	−8.8	58	31	2,981	−6.6	54	25	3,147	7.2	----	31	3,150	6.4	----	30	2,935	−12.0	58	31	2,894	−17.3	56	30	2,907	−14.4	67
650	31	3,545	−11.4	53	31	3,561	−9.4	49	25	3,757	3.9	----	31	3,757	3.5	----	30	3,503	−14.6	50	31	3,455	−20.1	54	30	3,472	−17.2	67
600	31	4,149	−14.5	48	31	4,172	−13.0	46	25	4,401	.2	----	29	4,400	−.1	----	30	4,103	−17.8	51	31	4,036	−23.5	----	30	4,063	−19.9	63
550	31	4,807	−17.9	42	30	4,832	−16.5	----	25	5,091	−3.5	----	29	5,092	−4.3	----	28	4,749	−21.7	----	31	4,670	−27.4	----	30	4,705	−23.5	----
500	30	5,511	−22.5	----	30	5,541	−20.8	----	23	5,847	−7.8	----	28	5,836	−9.2	----	28	5,447	−25.6	----	31	5,347	−31.8	----	30	5,394	−27.8	----
450	30	6,282	−27.7	----	28	6,306	−26.0	----	22	6,666	−12.8	----	28	6,653	−15.0	----	28	6,204	−30.8	----	30	6,086	−36.5	----	30	6,143	−32.8	----
400	30	7,115	−33.6	----	28	7,144	−31.3	----	22	7,547	−19.4	----	27	7,526	−21.4	----	28	7,030	−36.1	----	29	6,886	−41.9	----	29	6,958	−38.6	----
350	30	8,038	−40.3	----	28	8,078	−37.2	----	22	8,525	−26.6	----	27	8,497	−28.2	----	27	7,942	−42.6	----	28	7,785	−47.3	----	28	7,860	−44.9	----
300	30	9,074	−46.6	----	27	9,126	−43.7	----	22	9,616	−35.5	----	23	9,586	−35.8	----	23	8,955	−49.1	----	25	8,789	−52.1	----	25	8,876	−50.4	----
250	29	10,268	−52.5	----	26	10,342	−50.4	----	22	10,858	−45.4	----	20	10,840	−43.7	----	20	10,137	−53.4	----	25	9,961	−54.6	----	22	10,060	−53.4	----
200	27	11,695	−57.1	----	22	11,755	−54.7	----	20	12,310	−56.3	----	12	12,346	−51.0	----	16	11,527	−53.9	----	15	11,375	−52.9	----	16	11,516	−53.3	----
175	22	12,538	−56.1	----	15	12,571	−53.7	----	18	13,154	−61.3	----	8	13,216	−54.8	----	15	12,390	−53.5	----	11	12,201	−52.8	----	8	12,403	−54.7	----
150	19	13,513	−57.1	----	10	13,538	−53.6	----	10	14,130	−66.8	----	----	----	----	----	12	13,358	−53.2	----	6	13,213	−53.9	----	----	----	----	----
125	17	14,667	−58.4	----	8	14,688	−56.6	----	----	----	----	----	----	----	----	----	9	14,526	−54.6	----	----	----	----	----	----	----	----	----
100	6	16,017	−57.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

	Lake Charles, La. (1,016.3 mb.)				Lander, Wyo. (826.3 mb.)				Las Vegas, Nev. (945.8 mb.)				Little Rock, Ark. (1,008.1 mb.)				Mazatlan, Mexico (1,010.5 mb.)				Medford, Oreg. (967.7 mb.)				Merida, Mexico (1,010.4 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	5	11.7	91	31	1,696	−0.1	65	31	574	17.7	25	30	79	6.2	67	31	14	21.5	76	31	401	11.4	67	31	27	25.6	65
1,000	31	140	12.0	75	31	134	(*)	----	31	92	(*)	----	30	145	6.7	65	31	104	20.5	74	31	126	(*)	----	31	117	24.5	66
950	31	575	10.9	68	31	562	(*)	----	31	535	(*)	----	30	569	5.7	62	31	548	20.0	50	31	559	12.1	58	31	568	21.8	65
900	31	1,019	8.9	66	31	1,005	(*)	----	31	998	16.6	25	30	1,005	3.2	62	31	1,012	18.8	41	31	1,006	9.2	57	31	1,034	19.4	64
850	31	1,492	7.5	54	31	1,467	(*)	----	31	1,480	12.6	28	30	1,467	1.9	62	31	1,501	16.5	30	31	1,477	5.6	63	31	1,524	16.3	66
800	31	1,989	5.6	45	31	1,955	.3	59	31	1,984	8.2	33	30	1,955	.3	60	31	2,014	13.6	----	31	1,969	1.9	66	31	2,038	13.7	59
750	31	2,522	3.4	40	31	2,471	−3.3	59	31	2,514	3.8	35	30	2,474	−1.8	54	31	2,556	10.5	----	31	2,489	−1.6	61	31	2,584	10.9	55
700	31	3,072	.3	39	31	3,013	−6.8	63	31	3,068	−.7	41	30	3,016	−4.6	50	31	3,124	7.0	----	31	3,032	−5.1	58	31	3,152	8.4	42
650	31	3,669	−2.2	----	31	3,588	−10.9	66	31	3,657	−5.2	43	30	3,599	−7.8	47	31	3,732	3.0	----	31	3,612	−8.6	55	31	3,765	5.3	30
600	31	4,296	−5.3	----	31	4,197	−15.1	67	31	4,279	−9.5	45	30	4,215	−11.4	47	30	4,373	−1.3	----	31	4,225	−12.6	49	31	4,411	1.6	----
550	31	4,975	−9.7	----	31	4,852	−19.2	61	31	4,947	−14.0	43	30	4,879	−15.3	----	29	5,057	−6.1	----	31	4,885	−17.4	51	30	5,108	−2.7	----
500	31	5,702	−14.6	----	30	5,549	−24.4	----	31	5,663	−18.8	----	30	5,592	−19.6	----	27	5,797	−10.7	----	31	5,589	−22.4	----	30	5,855	−7.6	----
450	31	6,502	−20.1	----	30	6,314	−30.2	----	31	6,445	−24.4	----	29	6,370	−24.9	----	27	6,607	−15.9	----	31	6,358	−27.9	----	30	6,675	−13.1	----
400	31	7,356	−26.2	----	30	7,137	−36.4	----	31	7,288	−30.8	----	28	7,207	−30.8	----	27	7,478	−21.8	----	31	7,188	−34.1	----	29	7,556	−19.2	----
350	30	8,307	−32.6	----	29	8,048	−43.5	----	31	8,221	−38.2	----	27	8,145	−36.9	----	27	8,447	−29.0	----	30	8,114	−41.2	----	28	8,535	−26.6	----
300	30	9,376	−39.8	----	27	9,060	−51.0	----	31	9,263	−46.2	----	24	9,218	−43.3	----	27	9,531	−37.0	----	30	9,143	−48.9	----	28	9,627	−35.3	----
250	29	10,604	−47.5	----	26	10,230	−57.9	----	30	10,462	−54.1	----	22	10,419	−50.6	----	21	10,771	−46.1	----	30	10,318	−56.5	----	28	10,869	−45.3	----
200	26	12,063	−55.0	----	18	11,630	−59.3	----	27	11,870	−60.4	----	15	11,886	−55.1	----	----	----	----	----	27	11,724	−61.3	----	18	12,336	−56.1	----
175	22	12,932	−57.3	----	10	12,469	−56.5	----	18	12,696	−60.4	----	6	12,728	−53.2	----	----	----	----	----	22	12,541	−59.0	----	14	13,182	−61.7	----
150	17	13,910	−60.4	----	7	13,457	−55.7	----	8	13,622	−56.7	----	----	----	----	----	----	----	----	----	14	13,493	−57.6	----	5	14,148	−66.8	----
125	5	15,111	−62.7	----	----	----	----	----	5	14,780	−58.2	----	----	----	----	----	----	----	----	----	9	14,644	−57.7	----	----	----	----	----

	Miami, Fla. (1,017.2 mb.)				Nantucket, Mass. (1,007.8 mb.)				Nashville, Tenn. (965.1 mb.)				New Orleans, La. (1,016.3 mb.)				North Platte, Nebr. (917.3 mb.)				Oakland, Calif. (1,016.0 mb.)				Ogden, Utah (863.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	4	18.4	77	30	14	1.3	76	31	180	4.6	66	30	2	12.7	76	31	849	−0.3	75	31	6	13.4	77	31	1,355	6.2	59
1,000	31	150	18.8	76	30	76	(*)	----	31	139	(*)	----	30	137	13.1	69	31	146	(*)	----	31	139	12.5	76	31	128	(*)	----
950	31	590	16.5	73	30	488	−.5	63	31	560	3.3	64	30	571	11.0	64	31	565	(*)	----	31	569	10.5	76	31	564	(*)	----
900	31	1,047	14.4	62	30	917	−3.2	63	31	992	.6	66	29	1,017	9.2	62	31	1,001	−.5	73	31	1,017	9.1	59	31	1,013	(*)	----
850	31	1,529	12.7	48	30	1,367	−5.7	66	31	1,449	−1.7	65	28	1,490	7.7	49	31	1,456	−2.3	72	31	1,489	7.2	52	31	1,481	6.2	54
800	31	2,036	10.8	37	30	1,840	−8.4	70	31	1,930	−3.7	65	28	1,988	5.7	45	31	1,936	−3.9	68	31	1,985	4.8	42	31	1,976	2.9	56
750	31	2,577	8.4	38	30	2,344	−10.9	69	31	2,446	−5.3	59	28	2,519	3.5	----	31	2,449	−6.3	69	31	2,513	1.8	41	31	2,496	−1.2	63
700	31	3,139	5.8	35	30	2,866	−13.2	62	31	2,977	−7.7	53	28	3,071	1.2	----	31	2,980	−9.2	67	31	3,061	−1.6	43	31	3,040	−5.5	68
650	31	3,745	2.9	31	30	3,434	−16.2	62	31	3,558	−10.3	48	24	3,668	−2.1	----	31	3,559	−12.7	60	31	3,650	−5.3	42	31	3,620	−9.7	67
600	31	4,386	−.8	----	28	4,024	−19.3	59	30	4,164	−14.0	49	23	4,295	−5.2	----	31	4,155	−16.6	60	31	4,271	−9.4	41	31	4,231	−14.0	67
550	30	5,075	−4.9	----	28	4,668	−22.7	----	30	4,825	−17.9	47	18	4,970	−9.8	----	31	4,809	−20.9	----	31	4,938	−13.7	37	31	4,888	−18.1	61
500	30	5,817	−9.2	----	28	5,361	−26.9	----	30	5,526	−22.4	----	18	5,695	−14.5	----	30	5,500	−25.9	----	31	5,656	−18.6	----	31	5,592	−22.8	----
450	30	6,628	−14.4	----	28	6,120	−31.6	----	30	6,299	−27.7	----	15	6,485	−20.2	----	30	6,268	−31.3	----	31	6,436	−24.1	----	31	6,362	−28.2	----
400	28	7,507	−20.6	----	27	6,947	−36.4	----	29	7,134	−33.0	----	15	7,341	−25.9	----	30	7,079	−37.4	----	31	7,283	−30.3	----	31	7,191	−34.3	----
350	28	8,480	−27.7	----	26	7,860	−42.0	----	29	8,060	−39.6	----	15	8,294	−32.9	----	29	7,994	−44.6	----	30	8,217	−37.2	----	31	8,112	−41.2	----
300	25	9,577	−35.8	----	26	8,890	−47.6	----	29	9,097	−46.4	----	14	9,366	−40.3	----	29	9,009	−51.6	----	26	9,274	−44.7	----	31	9,142	−49.0	----
250	24	10,821	−45.0	----	26	10,081	−51.3	----	27	10,293	−52.6	----	11	10,569	−48.7	----	27	10,187	−57.4	----	23	10,485	−53.1	----	29	10,322	−56.3	----
200	20	12,278	−54.9	----	22	11,502	−51.4	----	23	11,731	−55.0	----	7	12,051	−56.9	----	21	11,620	−58.0	----	11	11,921	−60.5	----	22	11,705	−60.6	----
175	12	13,142	−59.9	----	17	12,374	−49.7	----	20	12,582	−54.9	----	----	----	----	----	15	12,476	−57.9	----	7	12,752	−60.7	----	17	12,553	−58.5	----
150	8	14,118	−64.2	----	10	13,394	−50.5	----	14	13,562	−55.8	----	----	----	----	----	9	13,455	−57.0	----	----	----	----	----	9	13,530	−56.2	----
125	----	----	----	----	6	14,617	−54.4	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	7	14,662	−57.1	----

See footnotes at end of table.

TABLE 1.—*Mean dynamic height (geopotential) in units of 0.98 dynamic meters, temperature in degrees centigrade, and relative humidity in percent, for standard pressures, as obtained by radiosondes during March 1947*—Continued

Standard pressure surface (mb.)	Oklahoma City, Okla. (969.5 mb.)				Omaha, Nebr. (980.9 mb.)				Phoenix, Ariz. (972.5 mb.)				Pittsburgh, Pa. (967.9 mb.)				Portland, Maine (1,006.3 mb.)				Rapid City, S. Dak. (903.0 mb.)				St. Paul, Minn. (988.9 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	391	6.6	62	31	308	1.3	72	31	339	18.7	38	30	382	−0.4	72	30	20	1.0	77	31	980	−4.2	86	31	225	−1.2	70
1,000	31	134	(*)	----	31	150	(*)	----	31	97	(*)	----	30	120	(*)	----	30	70	(*)	----	31	164	(*)	----	31	135	(*)	----
950	31	557	6.9	61	31	565	−.2	72	31	545	20.2	30	30	536	−1.6	71	30	482	−1.9	71	31	576	(*)	----	31	544	−3.5	70
900	31	999	4.8	62	31	994	−3.1	77	31	1,003	16.7	31	30	959	−4.0	75	30	907	−4.8	74	31	1,005	(*)	----	31	968	−6.5	73
850	31	1,463	2.5	65	31	1,445	−5.4	78	31	1,486	12.6	34	30	1,407	−7.2	79	30	1,354	−7.7	77	31	1,455	−8.0	78	31	1,412	−9.4	76
800	31	1,952	1.1	57	31	1,919	−6.9	72	31	1,990	8.3	39	30	1,877	−9.4	76	30	1,824	−10.5	77	31	1,931	−6.5	77	31	1,876	−11.3	68
750	31	2,473	−1.1	55	31	2,429	−8.5	67	31	2,525	4.0	41	30	2,381	−11.4	66	30	2,321	−13.4	71	31	2,435	−8.0	65	31	2,376	−13.0	60
700	31	3,016	−4.0	51	31	2,954	−10.8	62	31	3,077	.4	37	30	2,901	−13.5	56	30	2,841	−15.7	68	30	2,906	−10.6	62	31	2,896	−15.1	58
650	31	3,600	−7.6	45	31	3,527	−13.9	56	31	3,674	−3.0	----	30	3,469	−16.2	52	30	3,401	−18.6	68	30	3,537	−13.9	60	31	3,461	−18.2	60
600	31	4,216	−11.4	45	31	4,125	−17.3	51	31	4,296	−7.5	----	30	4,061	−19.5	49	30	3,989	−22.0	----	30	4,137	−17.2	59	31	4,047	−21.6	----
550	31	4,880	−15.8	43	31	4,773	−21.4	----	31	4,969	−12.4	----	30	4,708	−23.0	----	30	4,627	−25.7	----	30	4,781	−21.2	----	31	4,685	−25.5	----
500	29	5,585	−20.9	----	30	5,470	−26.1	----	30	5,688	−17.7	----	30	5,395	−27.1	----	30	5,309	−30.1	----	30	5,480	−25.8	----	31	5,368	−30.0	----
450	27	6,362	−26.1	----	30	6,228	−31.3	----	30	6,477	−23.5	----	29	6,166	−31.6	----	30	6,059	−34.8	----	28	6,242	−30.8	----	31	6,115	−35.0	----
400	24	7,217	−31.1	----	29	7,045	−37.4	----	30	7,320	−29.6	----	29	6,982	−37.3	----	30	6,865	−39.9	----	28	7,064	−36.3	----	31	6,924	−40.5	----
350	22	8,158	−37.4	----	29	7,954	−43.5	----	30	8,258	−36.5	----	29	7,891	−43.3	----	30	7,765	−45.4	----	28	7,976	−43.0	----	29	7,814	−46.5	----
300	21	9,207	−44.5	----	28	8,971	−50.2	----	27	9,318	−43.5	----	28	8,912	−48.9	----	29	8,784	−50.4	----	27	9,010	−49.5	----	26	8,818	−52.1	----
250	20	10,416	−52.1	----	27	10,147	−54.9	----	23	10,538	−51.3	----	28	10,096	−52.8	----	25	9,952	−53.0	----	21	10,215	−56.0	----	24	9,986	−55.0	----
200	15	11,863	−55.2	----	17	11,560	−53.9	----	17	11,977	−58.7	----	23	11,529	−54.2	----	24	11,393	−51.5	----	12	11,630	−55.9	----	17	11,415	−51.8	----
175	9	12,660	−55.1	----	12	12,422	−52.0	----	10	12,793	−58.4	----	23	12,384	−54.6	----	22	12,254	−50.9	----	7	12,462	−52.2	----	14	12,302	−49.8	----
150					10	13,417	−52.2	----	6	13,779	−59.4	----	20	13,346	−54.1	----	21	13,241	−51.4	----					12	13,319	−50.3	----
125					6	14,584	−53.1	----					12	14,519	−53.6	----	17	14,410	−51.8	----								
100													5	15,951	−52.8	----	8	15,864	−52.0	----								

Standard pressure surface (mb.)	San Antonio, Tex. (987.3 mb.)				San Juan, P. R. (1,016.1 mb.)				Santa Maria, Calif. (1,008.2 mb.)				Sault Ste. Marie, Mich. (983.1 mb.)				Spokane, Wash. (944.3 mb.)				Swan Island, W. I. (1,013.5 mb.)				Tacubaya, Mexico (773.2 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	240	12.9	65	30	15	24.1	80	31	71	13.1	76	31	221	−4.2	78	31	598	6.3	67	31	10	25.2	79	31	2,306	17.7	37
1,000	31	132	(*)	----	30	155	23.3	78	31	140	12.8	75	31	101	(*)	----	31	124	(*)	----	31	128	24.4	80	31	35	(*)	----
950	31	567	13.1	61	30	602	20.2	76	31	577	11.6	69	31	513	−5.1	70	31	551	(*)	----	31	582	20.9	83	31	501	(*)	----
900	31	1,017	10.6	64	30	1,066	17.0	73	31	1,022	10.4	59	31	929	−7.9	72	31	992	5.6	57	31	1,044	18.3	73	31	980	(*)	----
850	31	1,493	9.4	59	30	1,552	13.8	70	31	1,496	8.1	57	31	1,371	−10.4	73	31	1,456	2.1	62	31	1,533	15.8	64	31	1,480	(*)	----
800	31	1,995	8.3	50	30	2,061	11.4	60	31	1,994	5.6	44	31	1,836	−12.0	71	31	1,943	−1.3	65	31	2,046	13.5	53	31	2,011	(*)	----
750	31	2,529	5.8	38	30	2,603	10.5	----	31	2,524	2.9	36	31	2,336	−14.2	70	31	2,458	−4.6	64	31	2,595	11.4	41	31	2,567	15.9	38
700	31	3,087	2.8	31	30	3,171	9.4	----	31	3,075	−.1	32	31	2,849	−16.9	63	31	2,994	−7.8	64	31	3,162	9.1	28	31	3,147	11.1	41
650	31	3,685	−.8	27	29	3,783	6.4	----	31	3,668	−3.6	30	31	3,416	−19.6	60	31	3,573	−11.1	61	30	3,776	6.3	----	31	3,761	6.2	46
600	31	4,319	−4.5	----	27	4,433	2.5	----	31	4,292	−7.5	----	31	3,992	−23.2	----	31	4,177	−14.9	56	29	4,424	2.7	----	31	4,411	1.0	50
550	30	5,001	−8.5	----	27	5,132	−1.9	----	30	4,967	−12.0	----	29	4,626	−26.8	----	31	4,831	−19.4	57	29	5,124	−1.3	----	31	5,105	−4.1	46
500	30	5,731	−13.9	----	27	5,881	−6.4	----	30	5,687	−16.9	----	29	5,302	−30.6	----	30	5,525	−24.5	----	29	5,875	−6.2	----	31	5,850	−8.8	41
450	29	6,524	−19.2	----	27	6,707	−12.0	----	30	6,474	−22.5	----	28	6,052	−35.4	----	29	6,291	−29.8	----	29	6,699	−11.9	----	31	6,668	−13.6	----
400	26	7,389	−25.2	----	27	7,586	−18.6	----	30	7,324	−28.6	----	28	6,852	−40.9	----	28	7,119	−35.7	----	29	7,582	−18.4	----	30	7,548	−19.1	----
350	26	8,345	−31.8	----	27	8,567	−26.3	----	28	8,264	−35.9	----	27	7,747	−46.9	----	27	8,041	−42.8	----	29	8,564	−25.6	----	30	8,527	−26.4	----
300	24	9,429	−38.3	----	27	9,662	−35.2	----	27	9,315	−43.5	----	25	8,753	−51.7	----	27	9,065	−49.7	----	29	9,662	−34.2	----	29	9,623	−34.8	----
250	22	10,660	−46.7	----	25	10,907	−44.7	----	17	10,523	−51.7	----	19	9,933	−53.7	----	27	10,239	−56.3	----	29	10,912	−44.0	----	22	10,876	−44.7	----
200	17	12,111	−55.1	----	24	12,363	−55.1	----	11	11,949	−58.2	----	10	11,400	−52.9	----	25	11,622	−60.0	----	28	12,374	−55.5	----	8	12,323	−56.0	----
175	16	12,953	−58.5	----	21	13,204	−61.2	----	9	12,766	−59.9	----					23	12,446	−57.0	----	26	13,212	−61.5	----				
150	7	13,979	−61.2	----	19	14,145	−66.3	----	6	13,705	−55.6	----					17	13,410	−54.3	----	17	14,164	−67.5	----				
125					12	15,230	−71.3	----									11	14,613	−54.1	----								
100																	6	16,014	−53.4	----								

Standard pressure surface (mb.)	Tampa, Fla. (1,016.6 mb.)				Tatoosh Island, Wash. (1,011.9 mb.)				Toledo, Ohio (990.4 mb.)				Washington, D. C. (1,011.5 mb.)			
	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity	Number of observations	Dynamic height	Temperature	Relative humidity
Surface	31	9	14.9	82	31	31	7.6	87	31	191	−1.0	77	31	25	3.7	57
1,000	31	149	14.9	79	31	129	7.7	80	31	113	(*)	----	31	117	3.3	56
950	31	585	13.8	71	31	555	7.0	73	31	522	−2.4	72	31	553	1.1	59
900	31	1,037	11.6	65	31	995	5.0	67	31	948	−5.4	75	31	964	−1.9	65
850	31	1,514	10.0	48	31	1,459	2.3	63	31	1,394	−8.0	72	31	1,417	−4.8	67
800	31	2,016	8.6	36	31	1,947	−.2	58	31	1,863	−10.0	64	31	1,891	−7.4	62
750	31	2,551	6.0	36	31	2,465	−3.0	52	31	2,366	−11.9	58	31	2,394	−9.2	58
700	31	3,110	3.4	37	31	3,003	−6.0	46	31	2,884	−14.3	58	31	2,923	−11.6	56
650	31	3,707	.4	34	31	3,584	−9.6	49	31	3,450	−17.0	57	31	3,492	−14.5	55
600	31	4,345	−3.5	36	31	4,194	−13.5	48	31	4,040	−20.2	57	31	4,090	−17.8	52
550	31	5,029	−7.4	----	31	4,850	−17.6	48	31	4,681	−24.1	----	31	4,740	−21.1	----
500	31	5,764	−11.8	----	31	5,557	−22.4	----	31	5,369	−28.4	----	31	5,435	−25.4	----
450	30	6,564	−17.1	----	31	6,325	−27.8	----	30	6,129	−33.2	----	31	6,195	−30.4	----
400	29	7,434	−22.7	----	31	7,159	−33.6	----	29	6,941	−38.7	----	31	7,020	−36.0	----
350	29	8,400	−29.2	----	30	8,090	−40.1	----	28	7,851	−44.2	----	31	7,935	−41.9	----
300	29	9,483	−37.1	----	29	9,129	−47.6	----	28	8,871	−50.2	----	31	8,964	−48.0	----
250	29	10,717	−46.7	----	24	10,309	−54.8	----	27	10,056	−54.1	----	30	10,148	−52.3	----
200	29	12,161	−57.2	----	11	11,691	−58.8	----	21	11,498	−53.2	----	26	11,597	−54.6	----
175	27	12,994	−60.8	----	7	12,477	−55.7	----	17	12,346	−53.3	----	18	12,450	−53.8	----
150	23	13,952	−64.0	----					12	13,299	−51.5	----	12	13,456	−55.0	----
125	11	15,043	−66.6	----					8	14,479	−53.6	----	10	14,588	−56.4	----
100													7	16,013	−57.5	----

(*) Temperature and relative humidity data for this level are not available or are available only for certain days. See note entitled "Change in Summarization of Radiosonde Data," p. 6, in the January 1946 issue of the MONTHLY WEATHER REVIEW.

NOTE.—All observations scheduled between 0300 and 0500, G. C. T., except at Ciudad Victoria, Mazatlan, and Merida, where they are taken near 0200, G. C. T.

"Number of observations" refers to those of dynamic height only. (In a few cases temperature or humidity data may be missing for one or more standard pressure surfaces of some observations.) Relative humidity data are not published for standard pressure surfaces having a corresponding mean temperature below −20° C.

All relative humidity observations are obtained by electric hygrometer and have been adjusted to compensate for the values occurring below the operating range of the humidity element. For explanation of the adjustment see article entitled "Curve Method for Obtaining Monthly Means of Relative Humidity," p. 241, MONTHLY WEATHER REVIEW, December 1944.

None of the means included in these tables are based on less than 15 observations at the surface or 5 observations at a standard pressure level

TABLE 2.—*Free-air resultant winds based on pilot balloon observations made near 5 p. m., E. S. T. (2200 G. C. T.) during March 1947. Directions given in degrees from north (N=360°, E=90°, S=180°, W=270°). Velocities in meters per second*

Altitude (meters) m. s. l.	Abilene, Tex. (534 m.)			Albuquerque, N. Mex. (1,630 m.)			Atlanta, Ga. (299 m.)			Billings, Mont. (1,095 m.)			Bismarck, N. Dak. (512 m.)			Boise, Idaho (868 m.)			Brownsville, Tex. (7 m.)			Buffalo, N. Y. (220 m.)			Burlington, Vt. (100 m.)			Charleston, S. C. (16 m.)			Cincinnati, Ohio (150 m.)			Denver, Colo. (1,627 m.)			El Paso, Tex. (1,198 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	29	196	0.7	31	266	2.7	26	267	3.9	31	293	2.0	31	328	3.2	31	310	2.1	31	102	3.8	27	249	5.3	29	297	1.1	25	270	3.7	31	276	2.0	30	339	1.7	31	265	3.2
500							26	284	4.5										31	113	3.2	27	254	7.0	29	247	2.6	25	264	5.3	31	262	3.7						
1,000	29	241	1.9				25	277	6.0				30	322	4.4	31	304	2.0	24	186	1.2	23	259	8.2	23	261	3.9	23	262	7.0	27	258	4.0						
1,500	28	242	4.0				23	275	5.2	31	290	4.2	25	309	5.4	31	292	2.4	20	297	3.2	13	256	9.4	20	264	5.4	22	265	10.4	23	257	5.1				31	268	4.7
2,000	25	257	5.6	31	265	3.2	20	283	8.2	30	298	5.9	12	306	7.7	30	302	3.4	18	274	6.0				13	279	8.4	21	272	13.6	18	283	8.0	30	306	1.6	31	272	5.4
2,500	23	268	9.8	31	275	4.7	16	284	10.2	28	294	8.3	11	304	7.6	29	294	4.4	17	264	8.2							19	277	17.7	14	291	10.4	28	307	3.1	31	276	5.7
3,000	22	271	13.0	31	283	7.3	16	288	14.4	24	296	10.4	10	311	10.7	25	304	4.7	16	259	10.6							19	277	20.6	11	285	12.1	27	299	5.7	30	271	7.6
4,000	21	278	18.6	25	284	10.5	15	277	21.6	17	305	13.1	10	304	13.7	20	313	6.2	15	266	14.5							14	280	24.2				23	295	11.3	28	272	12.5
5,000	19	281	22.4	23	283	15.5				14	316	15.4				19	315	10.6	11	260	18.3													19	307	14.5	25	274	14.9
6,000	15	274	25.9	21	281	21.9				12	331	18.9				18	316	11.8	10	263	20.7													16	304	16.5	23	273	19.8
8,000				12	292	25.6										16	320	14.5																10	294	20.0	16	274	25.7

Altitude (meters) m. s. l.	Ely, Nev. (1,910 m.)			Grand Junction, Colo. (1,475 m.)			Greensboro, N. C. (271 m.)			Havre, Mont. (767 m.)			Jacksonville, Fla. (16 m.)			Joliet, Ill. (178 m.)			Las Vegas, Nev. (575 m.)			Little Rock, Ark. (88 m.)			Medford, Oreg. (416 m.)			Miami, Fla. (12 m.)			Mobile, Ala. (66 m.)			Nashville, Tenn. (194 m.)			New York, N. Y. (15 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	300	2.4	30	285	2.0	29	269	2.5	28	260	1.2	29	267	1.8	29	289	3.0	31	93	1.1	30	277	1.4	31	289	0.5	31	185	1.9	28	261	1.1	29	278	3.1	29	281	4.7
500							29	271	3.7				29	267	4.0	29	294	4.1				30	287	3.0	31	312	.2	31	231	1.9	28	260	2.2	29	273	3.8	29	282	6.1
1,000							28	269	5.0	28	274	2.6	26	269	6.9	25	282	4.1	31	118	1.1	26	274	3.4	31	184	1.7	28	246	3.3	21	290	3.4	27	271	4.5	29	285	7.6
1,500				30	284	1.9	28	275	6.8	27	276	4.7	20	266	9.7	18	280	5.2	31	86	.5	26	279	5.6	31	202	2.8	28	256	5.2	21	291	6.6	22	277	6.6	24	290	8.9
2,000	31	298	2.3	30	280	1.9	27	282	10.6	24	293	6.6	18	266	13.5	14	274	6.0	31	274	.5	24	277	7.0	27	208	2.6	26	268	8.8	20	290	10.2	21	277	7.5	19	291	10.8
2,500	31	282	2.6	30	276	3.0	22	282	14.3	23	299	8.3	17	272	14.8	11	297	8.0	31	293	2.6	21	287	9.7	22	229	2.5	24	267	10.1	19	290	14.1	20	290	10.3	16	291	12.8
3,000	31	280	2.8	29	275	4.9	20	276	15.3	19	305	10.1	14	277	17.9	11	294	10.3	30	298	3.2	19	287	12.0	17	199	1.7	24	268	13.0	18	283	16.5	19	294	14.2	12	284	12.2
4,000	30	301	5.2	25	298	8.3	16	274	20.8	12	299	13.3	13	275	22.8				28	307	8.1	17	288	18.9	16	289	3.0	21	273	15.3	15	283	21.7	16	289	16.4			
5,000	22	318	8.3	19	302	10.4	11	270	20.5				10	275	27.9				26	296	8.7	14	293	24.9	12	44	2.2	20	272	18.4				11	289	18.0			
6,000	20	318	10.5	16	312	13.5													25	291	12.4	12	279	29.5				19	266	22.6									
8,000	15	328	13.8	14	309	15.9													22	299	17.4							10	264	31.2									
10,000	11	324	20.3																14	302	15.0																		

Altitude (meters) m. s. l.	Oakland, Calif. (8 m.)			Oklahoma City, Okla. (396 m.)			Omaha, Nebr. (306 m.)			Phoenix, Ariz. (338 m.)			Rapid City, S. Dak. (982 m.)			St. Louis, Mo. (181 m.)			St. Paul, Minn. (225 m.)			San Antonio, Tex. (240 m.)			San Diego, Calif. (13 m.)			Sault Ste. Marie, Mich. (225 m.)			Seattle, Wash. (116 m.)			Spokane, Wash. (603 m.)			Washington, D. C. (24 m.)		
	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity	Observations	Direction	Velocity
Surface	31	246	3.5	29	222	1.9	29	308	2.3	31	177	0.4	28	3	5.1	28	284	2.4	30	296	2.6	31	59	0.8	30	263	3.3	25	313	4.1	31	248	2.2	30	224	2.1	29	280	4.4
500	30	245	2.6	29	223	1.8	29	322	1.9	31	216	.8				28	296	3.7	30	303	3.5	31	38	.8	29	291	3.6	25	312	5.3	31	227	2.0				29	278	6.3
1,000	21	193	1.6	29	250	2.7	29	290	2.8	31	221	1.5	28	2	5.0	26	283	5.2	27	300	4.3	30	253	.6	28	319	2.9	23	307	4.3	27	212	2.1	30	234	2.4	28	276	6.5
1,500	23	196	2.2	26	267	5.0	21	293	5.5	31	231	1.8	28	337	6.0	21	267	6.4	24	322	4.3	27	285	3.4	26	319	2.9	21	324	4.4	26	208	2.6	28	241	3.5	28	284	8.3
2,000	18	206	1.8	26	283	7.0	14	293	8.5	31	266	2.5	23	312	8.6	21	276	9.1	18	327	7.0	26	268	6.8	25	320	3.1	17	322	5.5	21	226	2.6	26	264	4.5	27	286	11.7
2,500	16	238	1.5	23	294	9.8	11	294	12.3	31	273	3.3	18	312	11.7	20	291	7.4	15	325	8.6	23	278	9.2	24	317	4.0	16	316	6.4	20	240	2.8	22	294	4.0	21	286	14.6
3,000	15	306	2.2	22	297	12.0				31	274	4.6	16	305	11.9	16	290	12.6	13	315	11.0	22	278	11.1	24	308	5.1	14	298	7.8	18	247	2.6	21	287	5.7	20	284	15.9
4,000	13	296	4.1	20	293	16.8				31	286	7.9	11	311	15.6	13	300	15.8				20	285	15.6	22	292	7.3	14	294	8.7	14	264	3.1	17	306	7.9	16	284	19.8
5,000				17	293	23.2				23	285	10.4	10	315	16.2							20	280	21.3	20	294	9.3	10	304	8.8	13	276	2.9	15	325	9.8	14	278	22.1
6,000				13	290	26.9				20	295	12.8										17	275	25.2	18	287	11.3				13	272	5.1	13	329	10.5			
8,000										13	287	19.4													12	296	11.3							10	318	12.7			

TABLE 3.—*Maximum free-air wind velocities (m. p. s.) for different sections of the United States based on pilot balloon observations during March 1947*

Section	Surface to 2,500 meters (m. s. l.)					2,501 to 5,000 meters (m. s. l.)					Above 5,000 meters (m. s. l.)				
	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station	Maximum velocity	Direction	Altitude (m.) m. s. l.	Date	Station
Northeast [1]	59.4	wnw.	1,576	26	Philipsburg, Pa.	51.6	wsw.	4,811	15	Toledo, Ohio	78.4	w.	8,745	19	Boston, Mass.
East-Central [2]	46.4	sw.	2,306	25	Richmond, Va.	61.8	wsw.	3,206	15	Richmond, Va.	73.6	w.	8,786	18	Richmond, Va.
Southeast [3]	53.2	w.	1,053	25	Spartanburg, S. C.	62.0	w.	4,691	25	Jacksonville, Fla.	68.0	wsw.	12,032	12	Miami, Fla.
North-Central [4]	37.6	nnw.	2,500	16	Rapid City, S. Dak.	53.4	nw.	4,843	29	Duluth, Minn.	60.9	w.	9,151	13	Sault Ste. Marie, Mich.
Central [5]	38.0	wsw.	2,494	15	Fort Wayne, Ind.	50.3	nw.	5,000	27	Dodge City, Kans.	88.8	nw.	7,948	25	Goodland, Kans.
South-Central [6]	43.6	wsw.	1,438	27	Little Rock, Ark.	50.4	wsw.	4,181	5	Oklahoma City, Okla.	80.0	nw.	9,557	1	Amarillo, Tex.
Northwest [7]	31.2	wsw.	1,972	31	Pocatello, Idaho.	42.2	nnw.	3,620	16	Glasgow, Mont.	82.0	wnw.	8,648	24	Boise, Idaho.
West-Central [8]	41.5	wnw.	2,489	3	Cheyenne, Wyo.	46.6	nw.	5,000	10	Oakland, Calif.	76.0	nw.	9,220	8	Oakland, Calif.
Southwest [9]	29.7	nw.	2,368	10	Sandberg, Calif.	49.0	nw.	5,000	1	El Paso, Tex.	95.0	nw.	11,868	1	El Paso, Tex.

[1] Maine, Vermont, New Hampshire, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, and northern Ohio.
[2] Delaware, Maryland, Virginia, West Virginia, southern Ohio, Kentucky, eastern Tennessee, and North Carolina.
[3] South Carolina, Georgia, Florida, and Alabama.
[4] Michigan, Wisconsin, Minnesota, North Dakota, and South Dakota
[5] Indiana, Illinois, Iowa, Nebraska, Kansas, and Missouri.
[6] Mississippi, Arkansas, Louisiana, Oklahoma, Texas (except El Paso), and western Tennessee.
[7] Montana, Idaho, Washington, and Oregon.
[8] Wyoming, Colorado, Utah, northern Nevada, and northern California.
[9] Southern California, southern Nevada, Arizona, New Mexico, and extreme west Texas.

RIVER STAGES AND FLOODS FOR MARCH 1947

C. R. JORDAN

Precipitation during March was above normal in the southern States, from southeastern Virginia through Texas and in Kansas and adjacent areas of bordering States. It was also above normal in Montana and parts of Wyoming, Idaho, Washington, and Oregon. More than twice the usual amounts fell along the coasts of South Carolina and Georgia, central Florida, and over small areas in Louisiana, eastern Texas, northeastern Kansas, northwestern Missouri, and southeastern Nebraska. It was unusually dry in the Middle Atlantic States, the Tennessee and Ohio Valleys, the Dakotas, and the Southwest.

Severe flooding occurred in the upper Missouri River and tributaries as a result of severe ice jams; run-off of more than 500 percent of normal was reported in eastern Kansas; and floods occurred in some streams of Louisiana and eastern Texas.

Atlantic Slope drainage.—Stages slightly above flood level were reached on two occasions during the month on the tributaries of the Susquehanna River in New York. The rises in both instances were caused by the melting of snow during warm periods of weather. Flood flows were not heavy, and no damage was reported. Flood stages were exceeded slightly at several stations along the South Atlantic coastal streams. Overflow was minor and no material damage was reported.

East Gulf of Mexico drainage.—Flooding was quite general in the Gulf Streams of Alabama and Mississippi. There were two periods of heavy rainfall: the first, from March 4–8, caused the streams to rise to moderate flood stages; streams were still high on the 13th and 14th when heavy rain again fell. Additional run-off from the latter rain either prolonged the high stages or caused further rises in streams. Principal streams affected were the Choctawhatchee, Black Warrior, Tombigbee, and Pearl Rivers. There was some damage to highways and bridges, but crops had not been planted and hence were not affected except for the delay in planting. The heavy rains did cause serious erosion damage to crop lands.

Floods in the Missouri Basin.—Severe floods accompanied the spring break-up on the upper Missouri River and tributaries. Floods on many tributaries were the highest of record; damage, especially to farm lands, property, highways, and bridges, was extensive. The United States Geological Survey reported that preliminary estimates showed peak discharges at several gaging stations on the upper Missouri River greater than those recorded in the flood of April 1943.

High stages were reached on southern tributaries of the Yellowstone River, especially on the Powder River. About half the city of Broadus, Mont., was inundated on March 18, forcing about 300 persons to leave their homes. The ice jam went out on March 19, and conditions were near normal again by March 21. No gage readings are available for Broadus.

Ice jams on the Yellowstone River, from Billings, Mont., to the mouth of the river, caused flooding of farmlands, with the worst flooding occurring from Glendive, Mont., to the mouth. There was a threat of serious flooding at Miles City, but the ice moved out quickly on March 22, allowing the water that had inundated about 1,000 acres of farm land in that section to move downstream.

In North Dakota, the Little Missouri, Cannonball, Heart, and Missouri Rivers caused considerable overflow. An ice jam formed on the Little Missouri River on March 25, south of Watford City and about 60 miles north of Medora. The ice and water were reported to be 8 feet higher than ever known before at this point. An ice jam also formed on the Heart River south of Glen Ullin, and on March 26, the water began going over the protecting dike at Mandan. Some flooding occurred in the south part of the town, but sandbags placed on the dikes by Army Engineers and local people saved heavy damage from flooding in larger areas of lowlands; the jam broke before serious damage occurred. At Glen Ullin, the peak stage was a little more than a foot higher than the previous maximum. The Cannonball River ice took out several bridges and flooded highways because the bridges could not accommodate the ice and water. Record stages were not reached on this stream.

Flood stages were reached on the Missouri River from the mouth of the Yellowstone River to the southern border of South Dakota. The flood waters from the Yellowstone River began flooding the bottomlands near Williston, N. Dak., on March 22. The river broke there late in the afternoon, with a crest stage of 17.8 feet. At Spanish Point, near Williston, water 15 feet deep rolled over the bottomlands from the Missouri River. At Sanish, N. Dak., the river was unusually high: it was 6 feet over Highway No. 23 on the west side of the river. The water rose rapidly and receded rapidly after the crest passed. The ice broke up at Elbowoods late in the afternoon of March 26, after the stage had risen to 23.1 feet, a rise of 11.0 feet in 24 hours.

At Bismarck, N. Dak., the ice broke about noon on March 28, and the river crested early on the 29th at a stage of 22.8 feet measured on the Weather Bureau gage. Buildings along the river above and below Bismarck were covered by the flood waters, but only the lowest part of the city itself was flooded. A few houses had water over the floors, but no houses were completely covered. The flood damage along the Missouri River was spotted because the ice was about 2 feet thick and quite solid. The water built up behind the ice until the ice broke for some distance downstream; then the ice held again until another head of water built up. Much flooding occurred behind these temporary ice jams. In South Dakota, the peak stages were generally slightly less than stages recorded in the 1943 flood, and only minor flooding occurred on the main stream below the southern border of South Dakota.

Arkansas Basin.—Minor flooding occurred at four stations in Kansas on the Neosho River and at Emporia, Kans., on the Cottonwood River. Little damage resulted.

Red Basin.—The Sulphur River in Texas exceeded flood stage slightly on two occasions during the month, but damage was negligible.

West Gulf of Mexico drainage.—There was light overflow of most streams in Louisiana and eastern Texas; very little damage resulted.

FLOOD STAGE REPORT FOR MARCH 1947

[All dates in March unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
ST. LAWRENCE DRAINAGE					
Lake Erie					
St. Joseph: Montpelier, Ohio	*Feet* 10	25	29	*Feet* 11.5	27
ATLANTIC SLOPE DRAINAGE					
Tioughnioga: Whitney Point, N. Y.	12	25	26	13.1	25
Chenango:					
Sherburne, N. Y.	8	25	27	9.1	25
Greene, N. Y.	8	25	27	9.5	25
Binghamton, N. Y.	16	25	26	16.3	26
Susquehanna:					
Oneonta, N. Y.	12	15	17	14.4	15
		24	27	14.4	25
Bainbridge, N. Y.	13	25	26	13.4	26
Vestal, N. Y.	14	15	16	14.6	15
		25	27	18.0	25
Conklin, N. Y.	11	15	16	12.9	15
		25	26	13.4	26
James: Columbia, Va.	10	15	18	17.0	16
Roanoke:					
Williamston, N. C.	10	16	25	11.0	21
Altavista, Va.	10	15	15	10.8	15
Neuse: Neuse, N. C.	14	16	16	14.2	16
Cape Fear: Elizabethtown, N. C.	20	10	11	20.5	11
Pee Dee: Mars Bluff Bridge, S. C.	17	11	14	17.6	14
Broad: Blairs, S. C.	14	9	9	15.7	9
Santee: Rimini, S. C.	12	11	[2]	14.0	14
Savannah: Butler Creek, Ga.	21	8	10	23.0	9
Ogeechee:					
Midville, Ga.	6	10	15	7.4	12
Dover, Ga.	7	10	27	9.8	16
Oemulgee:					
Macon, Ga.	18	7	10	23.0	8
Hawkinsville, Ga.	25	11	13	26.4	12
Abbeville, Ga.	11	11	23	15.6	14
Oconee:					
Milledgeville, Ga.	20	6	11	28.6	8
Dublin, Ga.	21	10	15	25.4	12
Mount Vernon, Ga.	16	12	20	19.5	14
Altamaha:					
Charlotte, Ga.	12	11	[2]	20.6	18
Piney Bluff, Ga.	17	14	26	20.8	19
EAST GULF OF MEXICO DRAINAGE					
Flint: Albany, Ga.	20	10	10	22.2	10
		13	16	23.7	14
Appalachicola: Blountstown, Fla.	15	9	[2]	20.7	13, 18
Choctawhatchee:					
Newton, Ala.	19	8	9	23.2	9
Geneva, Ala.	23	9	11	27.6	10
Caryville, Fla.	12	9	19	14.4	10–11
Black Warrior:					
Tuscaloosa, Ala.	47	9	10	49.7	9
Lock No. 7, Eutaw, Ala.	35	9	19	42.1	12
Tombigbee:					
Gainsville, Ala.	36	14	17	38.2	15
Demopolis, Ala.	39	9	22	51.2	17
Lock No. 3, Ala.	33	8	30	52.8	18–19
Lock No. 2, Ala.	46	11	23	54.2	20
Lock No. 1, Ala.	31	11	29	36.6	20–22
Pascagoula: Merrill, Miss.	22	9	12	22.3	11
		14	14	22.0	14

FLOOD STAGE REPORT FOR MARCH 1947—Continued

River and station	Flood stage	Above flood stages—dates		Crest [1]	
		From—	To—	Stage	Date
EAST GULF OF MEXICO DRAINAGE—con.					
Pearl:	*Feet*			*Feet*	
Jackson, Miss.	18	12	30	24.0	21
Monticello, Miss.	15	13	19	18.0	15
Columbia, Miss.	17	16	17	17.5	16
Pearl River, La.	12	8	[2]	15.9	15
MISSISSIPPI SYSTEM					
Upper Mississippi Basin					
Whitewater: Beaver, Minn.	7	24	24	8.0	2
Missouri Basin					
Grand:					
Chillicothe, Mo.	18	13	15	26.7	13
Brunswick, Mo.	12	15	15	12.2	15
Osage:					
Quenemo, Kans.	30	13	14	35.1	13
Ottawa, Kans.	24	13	16	29.5	14
Osawatomie, Kans.	28	13	17	33.6	16
LaCygne, Kans.	25	14	18	28.8	17–18
Trading Post, Kans.	24	15	19	25.5	18
Missouri:					
Washburn, N. Dak.	22	28	28	22.5	28
Bismarck, N. Dak.	19	29	29	22.8	29
Mobridge, S. Dak.	16	31	[2]	18.0	31
Ohio Basin					
Ohio: Dam No. 50, Fords Ferry, Ky.	34	Feb. 4	Feb. 8	35.3	Feb. 6
Arkansas Basin					
Cottonwood: Emporia, Kansas	20	14	16	22.6	15
Neosho:					
Burlington, Kans.	27	16	16	28.2	16
Iola, Kans.	15	14	14	15.5	14
Le Roy, Kans.	23	13	13	23.3	13
Neosho Rapids, Kans.	22	15	15	23.6	15
Red Basin					
Sulphur:					
Hagansport, Tex.	38	13	13	38.0	13
		20	20	38.3	20
Naples, Tex.	22	17	19	23.0	18
		24	26	22.8	25
WEST GULF OF MEXICO DRAINAGE					
Vermillion: Lafayette, La.	14	13	14	14.2	13
Nezpique: Basile, La.	22	15	18	23.6	16
Mermenteau: Mermenteau, La.	5	14	21	6.1	17
Calcasieu: Kinder, La.	16	14	17	17.0	15
Sabine:					
Logansport, La.	25	17	19	25.6	18
Bon Weir, Tex.	17	14	21	19.3	14
Neches:					
Rockland, Tex.	22	15	17	22.8	16
Evadale, Tex.	16	17	[2]	17.1	23
East Fork: Rockwall, Tex.	10	20	21	11.4	21
		25	26	11.6	26
Trinity: Liberty, Tex.	24	14	25	27.4	17–18

[1] Provisional.
[2] Continued at end of month.

CLIMATOLOGICAL DATA FOR MARCH 1947

CONDENSED CLIMATOLOGICAL SUMMARY OF TEMPERATURE AND PRECIPITATION BY SECTIONS

[For description of tables and charts, see Review, January 1943, p. 15]

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall, the stations reporting the highest and lowest temperatures, with dates of occurrence, the stations reporting the greatest and least total precipitation, and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Section	Temperature								Precipitation					
			Monthly extremes								Greatest monthly		Least monthly	
	Section average	Departure from the normal	Station	Highest	Date	Station	Lowest	Date	Section average	Departure from the normal	Station	Amount	Station	Amount
	°F.	°F.		°F.			°F.		In.	In.		In.		In.
Alabama	50.2	−5.8	5 stations	87	24	Fayette	14	3	7.13	+1.39	Fairhope	17.13	Huntsville	3.29
Arizona	53.0	+1.6	2 stations	95	20	Alpine	5	5	.13	−.93	Benson	.83	34 stations	.00
Arkansas	45.0	−7.5	do	79	21	Devils Knob	5	2	2.69	−2.05	Camden	7.26	Marshall	.64
California	53.1	+1.8	Greenland Ranch	99	22	Ellery Lake	−8	6	3.21	−.47	Squaw Creek	23.10	Independence	.00
Colorado	34.0	−.6	2 stations	82	23	Hayden	−25	1	.97	−.35	Silver Lake	3.50	2 stations	T
Florida	61.2	−4.1	Belle Glade	91	22	High Springs	21	3	6.84	+3.56	Crestview	16.27	Peters	.69
Georgia	48.9	−7.7	3 stations	85	24	Clayton	12	3	6.87	+1.84	Blakely	11.30	Waycross	3.75
Idaho	39.9	+4.1	do	78	16	Island Park Dam	−30	1	1.72	−.05	Roland	5.60	Howe	T
Illinois	34.8	−6.2	Mount Vernon	72	23	2 stations	0	3	2.45	−.72	Medora	4.55	Golena	1.15
Indiana	33.8	−7.1	Tell City	71	31	Forest Reserve	1	28	2.17	−1.57	Huntingburg	4.24	Berne	1.21
Iowa	31.8	−3.9	2 stations	79	23	2 stations	−2	3	1.38	−.33	Blockton	3.25	Inwood	.14
Kansas	39.0	−4.5	Ellsworth	86	23	do	−14	2	2.47	+.99	Bethel	5.50	2 stations	.68
Kentucky	38.6	−7.8	Pikeville	77	24	4 stations	−1	28	2.36	−2.37	Waunusit Cove	4.80	Oneonta	.93
Louisiana	54.0	−6.5	North Livingston	89	24	do	23	2	8.30	+3.43	Covington	19.24	Colfax	3.84
Maryland-Delaware	37.5	−5.4	4 stations	71	14	Oakland, Md	−6	1	1.68	−1.90	Oakland, Md	3.20	Annapolis, Md	.88
Michigan	27.2	−2.8	Mount Clemens	62	23	Kenton	−20	18	1.71	−.37	Milford	3.41	Stambaugh	.50
Minnesota	24.9	−1.9	2 stations	70	22	2 stations	−30	1	.68	−.54	Albert Lea	1.96	Ada	.05
Mississippi	50.1	−6.9	Columbia	88	24	5 stations	16	3	6.08	+.21	Biloxi	15.20	Lake Cormorant	2.29
Missouri	28.8	−4.5	Cape Girardeau	73	14	Conception	−8	7	2.80	−.43	Ozark	1.12	4 stations	.00
Montana	29.6	−1.7	Thompson Falls	71	28	Big Sandy	−41	5	.96	−.02	Mystic Lake	3.59	Pendroy	.09
Nebraska	33.9	−2.7	St. Paul	83	22	2 stations	−15	1	.61	−.51	Falls City	3.09	Mullen	.00
Nevada	44.8	+4.2	Overton	90	17	Geyser	9	5	.32	−.67	Jarbidge	2.25	5 stations	T
New England	31.9	−.5	Lake Cochituate, Mass.	61	24	First Connecticut Lake.	−19	1	3.16	−.45	Searsburg Station, Vt.	7.08	Essex Junction, Vt.	1.42
New Jersey	36.4	−3.0	Plainfield	67	14	Layton	0	1	2.71	−1.10	Elizabeth	4.52	Tuckerton	1.43
New Mexico	43.1	−.6	4 stations	87	26	Eagle Nest	−10	10	.38	−.37	Red River	1.56	3 stations	.00
New York	30.2	−2.1	Elmira	65	23	Stillwater Reservoir	−10	31	3.27	+.21	Boonville	9.03	Dansville	1.09
North Carolina	42.1	−7.6	Tapoco	79	24	Mount Mitchell	−1	4	3.53	−.68	New Bern	6.18	Montreat	.88
North Dakota	22.3	−1.7	2 stations	66	22	Westhope	−23	6	.34	−.45	Marmarth	.86	Gackle	.04
Ohio	33.1	−5.9	Mount Lookout	74	23	Mansfield	6	28	1.68	−1.77	Cleveland (Airport)	4.15	2 stations	.74
Oklahoma	45.3	−5.5	Altus	87	31	2 stations	0	2	1.53	−.65	Valliant	4.67	Meeker	T
Oregon	43.9	+2.9	Oakridge	85	15	Olive Lake	−4	7	3.04	+.29	Illahe	13.64	Owyhee Dam	.38
Pennsylvania	31.8	−5.9	York	67	14	Kane	−8	1	2.27	−1.23	Mount Pocono	4.93	Midland	1.07
South Carolina	46.8	−7.9	Calhoun Falls	84	24	Caesars Head	12	3	5.25	+1.24	Miley	9.62	St. Paul	2.41
South Dakota	28.0	−3.3	Tyndall	80	22	Camp Crook	−27	6	.64	−.48	Harveys Ranch	1.89	Eureka	.03
Tennessee	41.1	−8.4	Chattanooga	82	4	Crossville	5	3	3.15	−2.18	Ballnay	4.54	Halls	1.72
Texas	53.1	−5.4	Rio Grande	100	28	Dalhart	2	7	2.37	+.38	Orange	7.33	4 stations	.00
Utah	41.6	+3.2	St. George	82	21	Woodruff	−11	1	.93	−.51	Alta	5.40	7 stations	T
Virginia	37.7	−8.1	Gordonsville	76	23	Mountain Lake	1	11	2.39	−1.24	Burkes Garden	5.51	Barcroft	.89
Washington	44.2	+2.7	2 stations	82	15	Wilson Creek	2	5	2.43	−.94	Petersons Ranch	11.27	Sunnyside	.18
West Virginia	34.1	−8.3	do	76	23	Bayard	−7	1	2.27	−1.63	Pickens No. 2	7.48	Wardensville	.55
Wisconsin	27.7	−1.8	Meadow Valley	70	23	Rest Lake	−18	18	1.17	−.57	Blair	2.36	P. K. Reservoir	.19
Wyoming	30.4	+.5	2 stations	72	22	Lamar Ranger Station	−34	1	.90	−.24	Bechler River	5.31	Basin	.03
Puerto Rico	76.0	+1.9	do	95	9	Utuado	51	10	1.34	−1.98	San Lorenzo (Espino)	4.85	2 stations	.00

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MARCH 1947

District and station	Elevation of instruments: Barometer above sea level	Thermometer above ground	Anemometer above ground	Pressure: Station	Sea level	Departure from normal	Temperature of the air: Mean	Departure from normal	Maximum	Date	Mean maximum	Minimum	Date	Mean minimum	Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Departure from normal	Greatest in 24 hours	Days with 0.01 inch or more	Wind: Average hourly velocity	Prevailing direction	Maximum velocity: Miles per hour	Direction	Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms
NEW ENGLAND	Ft.	Ft.	Ft.	Mb.	Mb.	Mb.	°F.	°F.	°F.		°F.	°F.		°F.	°F.		°F.	%	In.	In.	In.		Mi.								0-10	In.	In.	
Eastport	75	67	85	1,005.1	1,008.1	−4.8	33.9	+1.7										74	2.80	−0.7			6.1											
Greenville, Maine	1,070	6	41	967.8	1,008.1	-----	33.0	+4.1	50	15	39	13	27	27	24	994	26	76	3.45	−.4	1.75	13	11.3	w.	52	e.	3	7	5	19	7.2	18.9	.0	1
Portland, Maine [1]	103	5	43	1,004.4	1,008.1	−5.4	25.1	+.6	50	24	37	−15	1	14	48	1,234	19	84	4.17	+1.2	1.64	13	5.1	nw.	18	-----	26	5	10	16	----	30.0	17.0	1
Concord [1]	289	4	45	998.0	1,008.8	−5.4	32.5	+1.4	53	15	42	1	1	23	31	1,010	24	75	2.72	−1.1	1.37	9	10.1	w.	50	ne.	3	8	10	13	5.9	4.0	.0	0
Burlington [1]	289	4	45	998.0	1,008.8	−5.4	31.5	+2.4	52	13	41	3	1	22	34	1,040	22	72	2.98	.0	1.36	10	8.6	nw.	41	ne.	3	6	10	15	6.3	8.0	.0	1
Burlington [1]	403	6	51	993.2	1,008.5	−6.4	30.4	+1.3	49	25	38	−1	1	22	37	1,076	24	80	1.70	−.3	.48	14	8.9	s.	32	se.	25	2	8	21	7.6	15.1	.4	0
Boston [1]	124	33	62	1,004.4	1,009.1	−5.1	37.7	+2.1	58	24	45	22	1	30	26	847	24	62	2.30	−1.3	1.79	8	13.4	w.	50	e.	3	7	13	11	5.7	.9	.0	0
Nantucket [1]	12	4	34	1,009.1	1,009.5	−4.4	36.2	+.7	50	14	43	21	1	30	23	892	28	76	2.06	−1.7	1.33	8	15.7	nw.	45	sw.	3	11	9	11	5.7	.3	.0	0
Block Island	26	11	46	1,008.8	1,009.8	−4.8	36.8	+1.4	50	14	42	22	26	31	19	878	30	80	3.37	−.5	2.57	5	19.0	w.	49	sw.	3	10	11	10	5.3	T	.0	0
Providence [1]	159	46	60	1,003.7	1,009.8	−4.8	38.4	+2.7	60	24	47	21	1	30	27	822	24	68	3.36	−.1	2.56	5	10.8	nw.	44	sw.	25	7	14	10	5.8	1.5	.0	0
Hartford [1]	159	5	44	1,004.1	1,010.2	−5.0	35.6	+.6	58	24	45	12	1	26	32	909	26	71	2.09	−1.8	1.13	7	10.2	nw.	33	sw.	25	6	12	13	6.3	2.9	.0	1
New Haven [1]	107	5	39	1,006.4	1,010.5	−5.4	35.6	+1.1	52	24	43	15	1	28	29	914	24	66	2.61	−1.2	1.45	9	9.3	w.	35	w.	3	10	7	14	5.5	3.6	.0	0
MIDDLE ATLANTIC							37.8	−2.6										66	2.35	−1.1			6.1											
Albany [1]	97	26	40	1,006.1	1,009.8	−5.8	32.0	+2.2	54	14	40	12	26	24	31	1,021	24	72	1.73	−.9	1.00	9	10.7	w.	38	w.	26	3	10	18	7.3	7.4	.0	0
Binghamton [2]	871	60	79	978.7	1,011.2	−4.4	31.1	−1.5	58	14	40	9	1	23	33	1,052	22	76	2.39	−.2	1.24	16	8.1	w.	32	sw.	25	2	8	21	7.8	20.5	.0	0
New York	314	415	454	999.3	1,011.2	−4.4	37.4	−.3	62	14	44	22	26	31	26	851	24	60	2.77	−.9	1.56	8	18.7	nw.	58	w.	25	11	10	10	5.5	5.3	.0	1
Harrisburg [1]	374	30	49	998.6	1,012.9	−3.7	36.6	−2.3	65	14	45	12	1	28	31	880	24	64	1.37	−1.7	.62	8	10.7	nw.	34	w.	25	3	13	15	6.6	3.6	.0	1
Philadelphia [2]	114	5	57	1,008.1	1,012.5	−4.1	39.0	−1.8	65	14	46	26	27	32	25	808	26	68	2.19	−1.2	.91	11	9.4	w.	26	s.	29	9	13	9	5.5	2.5	.0	2
Reading	323	47	306	1,000.3	1,012.2	−4.1	37.6	−3.0	64	14	46	15	1	30	28	848	-----	---	2.76	−.8	.95	9	14.5	w.	47	w.	25	5	12	14	6.3	5.5	.0	0
Scranton	805	72	104	982.1	1,012.2	−3.7	33.0	−2.7	60	14	40	11	1	26	31	992	-----	---	2.75	−.4	1.12	11	8.1	nw.	32	w.	25	2	15	14	6.8	11.7	.0	0
Atlantic City	52	37	172	1,010.5	1,012.5	−3.8	37.6	−1.0	58	24	44	25	1	32	18	848	27	68	2.10	−1.5	.87	10	16.8	w.	46	w.	26	8	11	12	5.9	2.3	.0	0
Trenton	190	89	107	1,004.7	1,011.9	−4.0	38.0	−1.1	65	14	45	21	1	31	26	839	-----	---	1.90	−1.5	.78	8	11.4	nw.	34	sw.	25	9	11	11	5.6	3.1	.0	2
Baltimore [2]	123	100	215	1,008.8	1,013.5	−3.1	40.4	−1.9	69	14	48	26	1	33	27	764	24	60	1.54	−2.2	.56	8	12.7	sw.	46	sw.	25	9	15	7	5.4	2.8	.0	2
Washington [2]	112	56	100	1,009.8	1,013.2	−3.4	40.2	−2.4	71	14	49	24	1	31	33	769	24	54	1.24	−2.5	.41	10	10.0	nw.	34	w.	25	6	14	11	5.9	3.4	.0	0
Cape Henry	18	8	54	1,013.2	1,013.9	−2.7	41.8	−4.8	71	24	48	27	4	35	33	721	32	70	3.59	−.3	1.09	11	13.8	n.	42	ne.	8	10	7	14	5.6	6.0	.0	0
Lynchburg [1]	686	4	50	988.8	1,013.9	−3.4	38.4	−7.0	70	23	48	16	9	28	38	825	24	64	3.06	−.5	1.00	9	9.6	w.	37	w.	25	9	12	10	5.5	19.1	.0	1
Norfolk [2]	91	80	125	1,011.2	1,014.6	−2.7	42.6	−5.6	70	24	49	27	9	36	30	693	30	70	3.54	−.2	1.09	10	11.4	w.	42	s.	14	10	7	14	6.1	10.0	.0	0
Richmond [2]	144	11	52	1,008.5	1,013.9	−3.0	41.4	−5.8	71	24	51	22	9	32	39	727	28	68	2.30	−1.4	.80	12	9.6	sw.	41	sw.	25	8	14	9	5.8	11.8	.0	0
SOUTH ATLANTIC							46.8	−6.0										70	4.58	+.8			5.8											
Asheville	2,253	77	92	934.3	1,015.9	−2.1	38.9	−6.0	75	24	49	18	3	29	41	806	28	72	2.22	−1.8	.74	11	10.3	nw.	34	nw.	25	10	7	14	6.0	8.5	.0	0
Charlotte [2]	779	63	86	986.8	1,015.2	−2.1	44.3	−6.1	71	24	54	22	3	35	31	640	29	64	3.99	−.2	1.78	12	8.2	ne.	36	sw.	25	12	6	13	5.6	1.3	.0	0
Greensboro [1]	886	6	56	983.1	1,015.6	-----	40.4	−6.7	73	23	52	20	9	29	44	765	28	68	2.25	−2.1	.89	12	9.5	ne.	36	w.	25	10	7	14	6.0	8.7	.0	0
Hatteras	11	5	50	1,013.9	1,014.2	−1.3	46.8	−5.2	66	25	53	32	3	40	27	563	40	80	5.36	+1.1	1.32	14	16.4	n.	47	w.	28	7	10	14	6.3	.0	.0	1
Raleigh [2]	376	5	69	1,001.0	1,014.9	−2.4	43.6	−6.6	75	23	54	24	4	34	40	664	28	65	3.44	−.4	1.19	13	8.5	nw.	42	sw.	25	11	6	14	5.6	.8	.0	1
Wilmington	72	73	107	1,012.9	1,015.6	−2.4	47.7	−5.6	67	14	57	27	3	38	34	535	36	72	6.15	+3.0	2.21	15	11.1	nw.	46	sw.	27	10	8	13	5.8	.1	.0	2
Charleston [2]	48	11	92	1,014.2	1,015.9	−2.1	51.0	−6.4	71	14	59	28	3	43	27	438	38	74	7.26	+4.2	1.51	15	12.1	w.	45	e.	19	12	4	15	5.8	.0	.0	3
Columbia, S. C.	347	70	91	1,002.7	1,015.6	−2.4	47.9	−7.3	77	24	58	25	3	38	33	532	35	69	4.36	+1.0	1.23	13	9.7	w.	39	w.	25	13	7	11	5.4	.0	.0	0
Greenville, S. C.	1,040	18	36	977.3	1,015.2	-----	43.8	−6.1	71	24	54	20	3	34	32	657	29	62	4.05	−1.1	1.29	10	10.9	w.	41	w.	25	10	8	13	5.7	1.0	.0	1
Savannah [1]	65	73	152	1,013.9	1,016.6	−1.4	52.2	−4.9	74	24	62	27	3	42	33	399	42	76	6.17	+3.1	1.73	13	12.8	w.	43	w.	26	9	8	14	6.1	.0	.0	4
Jacksonville [2]	43	86	110	1,015.2	1,016.6	−1.7	57.8	−4.8	80	24	67	31	3	49	31	236	45	74	5.11	+2.2	1.51	11	10.3	ne.	31	nw.	26	10	5	16	5.9	.0	.0	5
FLORIDA PENINSULA							66.8	−3.1										79	3.89	+1.8			4.6											
Key West [2]	21	10	64	1,015.9	1,016.6	− .7	71.2	−1.4	83	31	77	56	4	66	17	9	62	78	3.06	+1.7	1.48	7	9.9	n.	35	nw.	2	14	13	4	3.9	.0	.0	3
Miami [2]	25	242	249	1,015.9	1,016.9	−1.4	67.1	−3.2	82	15	74	43	3	60	24	52	58	77	1.63	−1.0	.42	9	13.6	nw.	39	w.	2	14	12	5	4.0	.0	.0	1
Tampa [1]	35	6	43	1,015.9	1,016.9	−1.4	62.0	−4.8	82	13	72	34	3	52	30	119	52	82	6.98	+4.6	1.97	11	9.7	nw.	47	sw.	1	9	11	11	6.0	.0	.0	5
EAST GULF							51.8	−6.0										71	8.29	+3.1			6.0											
Atlanta [1]	1,173	33	72	973.6	1,015.9	−2.1	45.3	−6.7	81	24	56	21	3	35	35	612	32	66	8.09	+2.7	3.24	12	13.4	nw.	52	nw.	25	8	10	13	6.0	T	.0	2
Macon [2]	370	79	87	1,002.4	1,015.9	−2.1	49.6	−7.1	85	24	61	25	3	38	38	482	34	64	7.80	+2.8	2.66	11	8.1	nw.	29	nw.	26	8	12	11	6.1	T	.0	3
Thomasville	274	49	58	1,007.1	1,017.3	-----	54.8	−5.4	79	24	65	26	3	44	35	319	-----	---	8.17	+4.1	2.70	10	----	----------	----	----------	--	9	9	13	----	.0	.0	4
Apalachicola	35	11	51	1,015.6	1,016.6	−1.0	57.4	−4.2	72	24	65	31	3	50	24	239	48	78	6.82	+2.6	1.67	12	10.0	nw.	29	n.	30	8	7	16	5.9	.0	.0	6
Pensacola [2]	56	54	79	1,014.9	1,016.9	−1.4	56.0	−4.3	78	24	64	31	3	48	25	286	46	74	13.54	+8.8	4.34	8	9.4	nw.	26	nw.	24	9	10	12	5.6	.0	.0	4
Anniston	741	9	-----	-----	-----	-----	47.8	−6.3	83	24	59	20	3	36	37	539	-----	---	9.69	+4.0	4.04	11	----	nw.	----	----------	--	6	13	12	----	T	.0	2
Birmingham [1]	700	5	62	991.5	1,017.3	−1.0	46.7	−7.1	85	24	58	20	3	35	40	568	35	70	5.67	.0	2.11	10	10.3	nw.	43	w.	24	7	9	15	6.5	T	.0	2
Mobile [2]	57	86	161	1,014.9	1,016.9	−1.1	55.4	−4.3	82	24	64	32	2	46	27	300	44	75	14.30	+8.3	4.28	9	10.0	n.	34	sw.	27	8	6	17	6.3	.0	.0	7
Montgomery [2]	218	92	105	1,008.8	1,016.9	−1.4	51.6	−6.2	85	24	62	24	3	42	37	417	38	68	6.04	.0	1.62	12	9.1	n.	30	sw.	24	11	8	12	5.6	T	.0	3
Meridian [2]	375	67	92	1,003.1	1,016.9	−.7	50.2	−6.9	84	24	61	22	3	39	36	463	39	73	5.98	+.8	2.02	12	7.7	nw.	34	sw.	27	10	9	12	5.6	T	.0	3
Vicksburg [2]	247	82	102	1,007.8	1,016.6	−1.4	51.2	−7.3	78	24	61	26	2	41	35	424	38	72	4.66	−.9	1.30	12	10.4	n.	34	sw.	27	9	8	14	6.2	T	.0	2
New Orleans [4]	53	50	84	1,014.9	1,016.6	−1.0	55.8	------	80	24	65	32	3	46	33	291	46	73	8.73	+4.0	3.75	9	7.9	nw.	23	ne.	18	9	5	17	6.4	.0	.0	6
WEST GULF							53.8	−6.1										71	2.81	.0			6.0											
Shreveport [1]	249	5	64	1,008.1	1,017.3	+.4	51.2	−6.1	80	22	61	26	2	41	32	428	40	71	6.19	+2.1	2.35	8	11.3	nw.	36	s.	23	10	9	12	5.8	T	.0	2
Fort Smith [1]	463	57	82	1,000.0	1,016.6	+.3	45.1	−7.5	77	31	57	17	2	33	41	619	32	64	1.99	−1.0	1.08	6	9.1	nw.	27	w.	5	7	10	14	6.4	T	.0	1
Little Rock [1]	357	26	58	1,004.1	1,017.3	+.4	45.7	−7.3	76	31	55	22	3	36	36	599	34	68	1.53	−3.1	.63	8	9.7	nw.	34	nw.	24	11	6	14	6.1	.7	.0	0
Austin [1]	605	10	41	994.9	1,016.6	-----	54.8	−5.9	85	23	66	27	2	44	32	334	41	65	3.28	+1.0	1.40	6	11.2	s.	32	s.	26	8	7	16	6.2	T	.0	4
Brownsville [1]	57	5	54	1,012.2	1,014.6	+.4	64.8	−3.4	94	24	75	39	8	55	30	107	56	81	.32	−1.2	.17	4	12.9	se.	33	se.	26	7	11	13	6.1	.0	.0	1
Corpus Christi [1]	20	4	33	1,015.2	1,015.9	+.3	60.6	−2.4	93	23	71	31	8	50	33	188	51	78	1.36	------	.74	6	13.0	se.	34	se.	26	8	10	13	5.8	.0	.0	2
Dallas [1]	512	5	45	998.3	1,016.9	+.6	50.2	−7.2	81	23	60	22	2	40	34	465	38	67	2.33	−.6	.71	9	12.7	s.	36	nw.	13	7	11	13	6.2	1.2	.0	2
Fort Worth [1]	679	40	56	992.6	1,016.9	+1.0	49.8	−6.9	82	23	60	20	2	40	35	478	38	67	2.92	+.6	1.23	7	13.3	n.	43	n.	24	5	12	14	6.3	3.9	.0	2
Galveston [2]	54	106	114	1,014.9	1,016.9	.0	56.2	−6.2	76	24	62	37	2	51	21	274	50	84	3.46	+.8	1.11	7	13.4	e.	34	se.	12	9	7	15	5.9	.0	.0	3
Houston [2]	138	157	190	1,011.5	1,016.9	.0	56.9	−6.4	82	23	66	32	2	48	28	267	46	76	2.21	−1.3	.96	9	11.7	se.	33	nw.	13	10	5	16	6.0	.0	.0	2
Palestine	510	64	72	999.0	1,017.3	+.7	52.0	−7.1	78	27	61	27	2	43	31	404	38	60	5.11	+1.6	2.42	8	9.1	n.	26	e.	18	7	13	11	6.0	T	.0	3
Port Arthur [2]	34	59	134	1,015.2	1,016.6	.0	56.0	−5.9	80	24	64	32	2	48	25	281	46	78	4.43	+1.2	1.41	10	14.3	n.	45	se.	12	12	8	11	5.5	.0	.0	5
San Antonio [1]	693	5	51	991.2	1,016.3	+.7	58.0	−6.8	90	27	69	26	8	43	40	297	44	67	1.46	−.4	1.22	5	10.5	se.	30	ne.	15	10	9	12	5.6	T	.0	1

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MARCH 1947—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms
OHIO VALLEY AND TENNESSEE	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	°*F.*	°*F.*	°*F.*		°*F.*	°*F.*		°*F.*	°*F.*		°*F.*	%	*In.*	*In.*	*In.*		*Mi.*								*0–10*	*In.*	*In.*	
							36.7	−6.4										72	2.18	−2.0											7.0			
Chattanooga [1]	762	6	66	988.5	1,016.6	−1.4	43.0	−6.1	82	24	54	24	11	32	40	684	31	70	4.40	−1.4	1.07	10	9.6	nw.	55	w.	24	6	11	14	6.6	T	.0	1
Knoxville [1]	995	27	33	979.7	1,016.3	−1.3	41.2	−6.3	79	24	52	22	3	31	38	738	29	68	2.91	−2.1	.98	12	10.0	ne.	49	w.	24	5	11	15	6.8	1.2	.0	1
Memphis [4]	399	5	86	1,002.4	1,016.6	−1.0	45.0	−6.9	74	31	55	19	3	35	35	619	32	68	1.96	−3.3	.65	7	9.6	nw.	35	sw.	24	8	10	13	6.2	1.6	.0	1
Nashville [1]	548	5	72	996.6	1,016.6	−1.4	41.3	−7.9	78	24	52	20	3	31	39	734	29	68	2.69	−2.4	.74	10	10.5	nw.	54	w.	24	3	15	13	6.9	5.9	.0	1
Lexington [1]	989	4	28	979.0	1,016.3	-----	34.8	−8.9	68	24	44	1	28	25	36	940	28	74	1.82	−2.5	.76	10	----	sw.	----	----	----	5	9	17	7.1	11.7	.0	1
Louisville [1]	525	106	120	997.0	1,016.5	−.4	37.1	−7.0	70	23	47	8	28	27	37	863	26	68	2.20	−2.2	.78	11	9.8	n.	38	nw.	25	6	9	16	6.8	10.8	.0	1
Evansville [1]	431	11	40	1,000.7	1,016.9	−.7	37.0	−7.4	69	23	47	5	28	27	40	869	28	72	2.58	−1.6	.82	11	10.7	w.	43	w.	24	9	6	16	6.4	10.9	.0	1
Indianapolis [1]	823	5	54	984.8	1,015.2	−1.4	32.8	−6.0	69	23	41	11	4	25	28	996	24	76	1.95	------	.71	10	12.6	w.	50	nw.	24	3	11	17	7.0	9.5	.0	3
Terre Haute [1]	575	68	149	995.3	1,016.6	.0	34.6	−6.0	70	23	44	17	3	26	29	944	26	75	1.52	−2.2	.76	9	11.9	w.	43	w.	24	6	11	14	6.5	5.1	.0	1
Cincinnati [2]	627	11	51	992.6	1,015.9	−1.4	38.0	−2.9	72	23	46	21	26	30	32	839	26	74	1.60	−2.3	.73	12	6.3	nw.	23	w.	3	5	10	16	6.9	4.5	.0	1
Columbus [2]	822	90	110	984.4	1,014.9	−2.0	34.6	−4.5	65	23	42	20	26	28	28	943	26	77	1.07	−2.4	.23	11	11.6	w.	48	s.	24	5	8	18	7.2	3.3	.0	0
Dayton [1]	1,003	6	55	978.0	1,015.2	−1.1	32.3	−6.4	67	23	40	14	2	24	29	1,013	25	77	1.57	−2.1	.75	9	13.9	w.	57	nw.	25	5	9	17	7.3	5.9	.0	1
Elkins [1]	1,947	4	45	943.4	1,015.2	−2.4	30.7	−8.4	62	31	40	3	1	21	44	1,065	22	80	3.01	−.8	.74	17	8.9	w.	41	w.	22	2	9	20	7.6	25.7	.0	1
Parkersburg	637	77	84	991.2	1,014.9	−2.7	36.2	−6.6	69	23	44	21	26	28	38	896	25	66	1.86	−1.6	.67	12	7.8	w.	38	nw.	25	4	7	20	7.5	5.9	.0	1
Pittsburgh [1]	842	39	54	982.4	1,013.2	−3.4	32.6	−4.6	58	23	40	16	26	25	31	1,008	24	72	1.51	−1.5	.46	11	12.9	w.	50	s.	25	3	6	22	7.7	4.7	.0	1
LOWER LAKES							30.9	−1.5										80	2.89	+0.1										7.5			
Buffalo [1]	768	34	96	982.1	1,010.8	−4.8	29.9	−1.4	54	23	36	13	26	23	38	1,089	24	81	2.05	−.5	.36	18	16.2	w.	49	w.	25	3	3	25	8.2	13.5	T	0
Canton	448	10	61	992.2	1,008.8	−5.8	28.6	+.8	51	13	36	8	26	21	30	1,127	23	82	3.95	+1.4	1.50	16	9.7	w.	34	sw.	25	4	7	20	7.7	35.6	.7	0
Oswego	335	71	85	997.6	1,010.5	−5.1	31.2	+.1	53	23	36	13	26	26	29	1,049	25	78	4.23	+1.6	1.01	19	11.0	w.	30	sw.	25	3	3	25	7.9	47.4	3.2	1
Rochester [1]	523	5	69	991.2	1,011.2	−4.7	30.0	+.2	58	23	37	11	26	23	34	1,096	24	84	2.92	+.2	.58	20	13.9	w.	49	se.	25	3	7	21	7.9	20.7	T	0
Syracuse	596	5	57	988.2	1,010.8	−4.8	30.8	+1.1	56	24	38	11	26	24	35	1,058	24	81	4.18	+.9	1.38	21	12.8	sw.	50	sw.	25	2	6	23	8.0	38.6	3.5	0
Erie [2]	714	57	81	986.1	1,012.9	−3.0	31.6	−1.9	57	23	37	18	26	26	34	1,035	24	86	1.87	−.8	.47	18	9.9	w.	39	w.	25	2	8	21	7.8	20.0	.0	1
Cleveland [1]	762	27	54	985.1	1,013.5	−2.8	31.8	−2.7	60	23	39	17	26	24	28	1,025	25	81	4.15	+1.4	2.31	17	12.7	w.	55	w.	25	3	13	15	7.3	20.9	.2	1
Sandusky	629	5	67	990.2	1,013.9	-----	32.8	−2.3	60	23	40	17	3	26	23	998	----	---	2.12	−.6	.82	14	10.9	w.	43	w.	25	5	10	16	6.6	11.9	.0	1
Toledo [1]	628	5	47	990.2	1,013.9	−2.7	31.2	−2.6	58	23	39	15	5	24	29	1,047	23	74	1.78	−.8	.78	13	12.9	sw.	45	nw.	25	4	8	19	7.2	7.6	.0	2
Fort Wayne [1]	857	5	33	982.7	1,014.6	−2.0	31.0	−5.1	60	23	39	12	4	23	25	1,055	24	80	2.14	−1.1	1.06	13	9.6	sw.	40	w.	25	6	10	15	6.8	6.0	.0	1
Detroit [1]	730	5	78	986.1	1,013.2	−3.1	30.8	−2.2	58	23	37	18	15	25	21	1,058	24	77	2.45	.0	1.00	12	11.9	nw.	45	n.	25	4	9	18	7.1	9.4	T	1
UPPER LAKES							28.0	+.2										77	1.79	−.3										6.5			
Alpena	609	5	89	989.2	1,012.2	−3.7	26.6	+1.1	54	23	33	10	27	20	28	1,196	20	79	2.46	+.5	1.43	10	11.9	nw.	41	nw.	25	4	12	15	7.1	27.3	8.0	0
Escanaba	612	51	72	990.9	1,013.9	−2.7	27.2	+3.0	50	23	35	9	16	19	30	1,172	20	78	1.08	−.8	.53	10	11.5	nw.	40	n.	24	8	12	11	5.9	3.8	T	0
Grand Rapids [3]	707	70	244	987.8	1,014.6	−1.7	31.2	−2.2	56	23	37	17	8	25	23	1,052	22	78	2.34	−.1	1.16	12	11.3	w.	36	nw.	25	7	6	18	6.7	17.3	T	0
Lansing [2]	878	5	90	981.0	1,014.2	−1.7	29.0	−3.2	56	23	36	15	27	22	22	1,119	21	76	2.82	+.5	1.61	13	9.5	w.	29	n.	24	6	3	22	7.2	12.9	2.0	1
Marquette	734	44	73	986.1	1,013.9	−2.4	26.6	+1.8	48	23	33	12	16	21	27	1,188	19	74	1.16	−1.1	.25	14	9.8	nw.	30	sw.	22	5	5	21	7.3	8.7	1.5	0
Sault Ste. Marie [1]	614	11	52	988.8	1,012.5	−4.1	23.5	+2.9	50	23	31	5	18	16	30	1,286	18	84	1.29	−.5	.52	11	11.6	nw.	42	nw.	25	4	7	20	7.5	12.1	2.3	0
Chicago [1]	673	5	36	990.2	1,015.6	−1.0	31.8	−2.7	57	12	39	16	4	25	27	1,025	24	74	2.69	+.1	1.06	10	10.4	w.	34	nw.	24	6	9	16	6.8	13.3	.0	1
Green Bay	617	5	32	991.5	1,014.9	−1.0	29.4	+.3	63	23	36	14	16	22	25	1,102	20	71	1.47	−.6	.86	8	8.8	w.	30	w.	25	8	9	14	5.8	3.5	.0	1
Milwaukee [1]	681	33	66	989.5	1,015.2	−.7	30.0	−.1	60	23	37	16	16	24	20	1,085	23	76	1.73	−.7	.60	10	12.3	nw.	35	nw.	29	8	11	12	6.0	9.4	T	0
Duluth [3]	1,133	5	47	973.2	1,016.3	−.3	24.5	+.8	51	22	33	2	16	16	29	1,257	16	82	.82	−.7	.65	6	13.0	nw.	42	nw.	25	12	10	9	4.8	7.7	T	0
NORTH DAKOTA							23.1	+1.8										80	.33	−.6										6.1			
Fargo [1]	940	6	47	982.7	1,018.6	+1.3	24.6	+1.9	58	22	32	0	4	17	28	1,252	20	84	.48	−.5	.29	12	12.6	n.	39	w.	28	4	10	17	7.3	5.2	.0	0
Bismark [1]	1,677	5	43	956.3	1,019.0	+1.4	25.6	+3.7	61	22	34	−6	6	17	32	1,221	19	76	.21	−.7	.09	6	11.7	nw.	36	nw.	28	1	8	22	8.1	2.6	.0	0
Devils Lake	1,478	11	44	963.8	1,019.6	+2.3	21.4	+1.6	48	22	30	−7	6	13	25	1,353	16	80	.18	−.6	.05	8	9.0	nw.	27	nw.	28	4	9	18	7.4	4.0	T	0
Grand Forks [1]	832	4	41	987.1	1,019.0	-----	21.4	-----	50	22	30	−8	4	12	30	1,351	18	85	.42	------	.12	10	----	nw.	----	----	----	5	7	19	----	7.1	.0	.0
Williston	1,878	42	50	949.5	1,019.0	+2.4	22.7	−.2	51	22	31	−13	6	15	32	1,311	16	77	.34	−.4	.15	9	7.6	nw.	27	nw.	20	5	7	19	7.5	4.0	T	0
UPPER MISSISSIPPI							32.6	−2.6										75	1.74	−.6										6.7			
Minneapolis-St. Paul [1]	919	43	74	981.7	1,016.3	+.7	28.9	−.7	58	22	36	12	16	22	29	1,122	20	73	.47	−1.0	.19	8	11.3	nw.	34	nw.	29	7	8	16	6.5	3.3	.0	1
La Crosse [1]	714	5	29	989.5	1,016.3	+.4	29.2	−.6	62	23	37	12	4	22	28	1,110	22	78	1.42	−.2	.48	9	9.3	nw.	34	nw.	29	8	5	18	6.7	4.4	T	1
Madison [2]	974	70	78	979.0	1,015.6	−1.0	30.4	−.2	62	23	39	11	4	22	29	1,070	22	78	1.33	−.7	.43	10	11.0	nw.	41	nw.	29	8	7	16	6.6	6.7	.0	1
Charles City	1,015	10	51	979.3	1,017.6	+1.0	30.2	−.5	64	23	37	13	16	24	34	1,078	----	---	1.66	−.1	.65	14	7.1	nw.	22	nw.	25	7	11	13	6.3	6.7	T	1
Moline [1]	606	6	50	994.2	1,017.6	+1.0	32.5	−2.3	61	22	41	13	3	24	35	1,011	23	72	2.10	−.2	.78	9	10.5	w.	33	nw.	25	4	12	15	6.9	7.2	.0	1
Dubuque	699	60	79	990.2	1,016.6	.0	32.0	−2.0	60	23	39	16	16	25	32	1,024	23	70	1.50	−.5	.66	8	6.3	nw.	21	nw.	25	6	11	14	6.7	.4	.0	1
Burlington [1]	702	4	36	990.9	1,017.3	-----	32.4	−5.5	63	23	42	3	3	23	38	1,014	26	79	1.73	−1.0	.79	10	11.6	nw.	41	nw.	25	5	9	17	6.8	4.4	.0	1
Cairo	357	5	99	1,003.7	1,016.9	.0	41.6	−6.1	71	31	50	18	3	33	31	723	----	---	2.44	−1.3	.89	12	10.7	ne.	38	nw.	24	8	10	13	6.1	3.5	.0	0
Peoria [1]	609	6	26	994.6	1,017.6	+1.0	32.7	−3.3	58	23	41	11	3	25	32	1,005	24	72	2.23	−.5	.99	9	10.8	nw.	34	nw.	25	4	10	17	6.9	6.8	.0	2
Springfield, Ill. [3]	636	5	191	993.2	1,017.3	+.3	35.7	−4.5	65	23	44	12	3	28	28	906	26	76	2.54	−.6	.99	13	12.7	w.	42	nw.	25	5	10	16	7.1	10.7	.0	2
MISSOURI VALLEY							34.6	−3.4										74	2.43	+.5										7.0			
Columbia, Mo. [3]	784	6	66	988.2	1,017.3	+.7	36.4	−6.5	74	22	45	9	3	28	45	880	24	68	3.93	+1.0	.85	11	8.9	w.	28	nw.	24	9	7	15	6.2	15.8	.0	3
Kansas City [1]	963	39	76	981.7	1,017.6	+1.3	37.6	−5.1	74	22	45	8	3	30	37	848	28	70	5.03	+2.7	2.42	15	12.2	n.	35	nw.	24	4	10	17	7.1	8.6	.0	2
St. Joseph [3]	967	11	49	981.7	1,017.6	+1.3	36.4	−4.1	76	22	44	11	3	29	39	886	28	73	4.41	+1.9	2.33	14	9.8	nw.	26	nw.	24	8	14	9	5.8	15.1	.0	3
Springfield, Mo. [1]	1,324	5	67	968.5	1,016.9	+.6	37.4	−6.2	72	22	47	5	3	28	40	850	28	74	2.65	−.7	1.14	11	13.4	s.	40	nw.	13	5	10	16	6.9	2.2	.0	2
Topeka [3]	987	65	87	981.0	1,017.6	-----	38.2	−4.4	78	22	46	9	2	30	42	833	28	76	4.21	+2.1	2.63	14	10.1	n.	31	n.	24	4	10	17	7.2	8.1	.0	2
Lincoln [3]	1,189	11	81	973.6	1,018.0	+1.7	35.9	−1.6	80	23	45	12	2	27	39	902	26	74	.96	−.3	.40	13	11.0	n.	34	nw.	14	5	11	15	6.6	5.8	.0	0
Omaha [1]	1,105	5	68	977.0	1,018.3	+1.7	34.2	−1.9	76	23	42	10	3	26	43	952	26	71	.87	−.5	.43	11	13.1	nw.	37	nw.	24	3	11	17	7.2	5.0	.0	0
Valentine	2,598	46	54	923.5	1,018.3	+1.7	29.4	−2.9	75	22	39	−11	2	20	41	1,103	22	78	.47	−.6	.12	7	9.6	n.	33	nw.	20	4	9	18	7.1	5.8	.0	0
Sioux City [1]	1,138	5	40	975.6	1,018.0	-----	31.3	−.8	71	23	40	7	4	23	38	1,044	24	78	.53	−.6	.12	14	11.4	nw.	33	w.	28	4	6	21	7.5	3.3	.0	0
Huron [1]	1,301	5	41	969.9	1,018.6	+1.3	28.8	−.1	71	22	38	3	2	20	39	1,124	22	79	1.26	+.4	1.02	11	12.3	nw.	34	nw.	24	2	6	23	8.1	6.2	1.3	0
NORTHERN SLOPE							30.3	−1.5										75	.84	−.1										6.9			
Billings [1]	3,570	16	40	890.3	1,017.6	-----	29.2	−4.8	64	22	38	−8	1	20	37	1,112	23	80	1.08	------	.45	12	9.8	sw.	34	nw.	30	2	8	21	7.6	11.7	.0	0
Havre	2,507	11	67	927.9	1,020.7	+4.1	21.6	−5.5	59	31	32	−32	6	11	41	1,348	16	81	.08	+.3	.45	10	7.3	w.	25	e.	30	3	8	20	7.2	15.4	.0	0
Helena [1]	4,124	5	43	872.3	1,018.3	+3.1	32.4	+.7	61	21	42	−12	5	23	34	1,009	24	74	1.10	+.3	.37	10	7.0	w.	30	w.	30	3	7	21	7.5	7.0	.0	1
Missoula [1]	3,205	4	32	901.1	1,016.9	-----	38.6	+5.1	65	28	49	10	1	28	38	818	28	72	.47	−.4	.14	10	5.6	se.	18	n.	4	5	7	19	7.1	3.8	.0	0
Kalispell	2,973	48	56	910.9	1,015.9	.0	34.6	+1.7	61	21	43	−2	5	26	30	940	27	74	.90	.0	.41	6	5.4	w.	18	n.	3	5	5	21	7.1	9.4	.0	0
Miles City [1]	2,371	5	78	932.6	1,020.0	+2.4	24.0	-----	64	22	36	−27	6	12	46	1,269	18	80	1.10	------	.27	13	----	nw.	----	----	----	5	6	20	7.3	2.2	.0	0
Rapid City [1]	3,259	5	63	900.8	1,018.6	+1.3	26.4	−5.3	65	22	36	−6	1	16	40	1,198	21	84	.39	−.6	.08	9	13.4	nw.	32	nw.	20	5	6	20	7.3	2.2	.0	0
Cheyenne [1]	6,094	5	40	809.3	1,015.9	+.7	30.9	−2.2	61	22	43	−14	1	19	39	1,056	21	68	.81	−.2	.24	10	12.2	nw.	37	w.	3	5	13	13	6.1	6.2	.0	2
Lander [1]	5,352	60	68	832.7	1,015.9	+.3	33.3	+.9	61	22	46	−11	1	21	40	980	20	62	.80	−.4	.34	9	7.1	se.	35	sw.	3	7	12	12	5.7	12.6	.0	2
Sheridan [1]	3,790	5	38	883.2	1,018.6	+2.0	27.7	−3.7	65	21	40	−14	1	16	35	1,153	20	78	1.31	+.2	.57	14	7.4	nw.	36	nw.	13	4	9	18	7.1	13.3	.0	0
North Platte [3]	2,821	11	51	915.7	1,016.9	+.6	34.8	−1.8	78	22	47	−6	2	22	44	940	22	72	.34	−.5	.14	11	8.8	n.	29	nw.	20	8	10	13	6.1	3.1	.0	1

See footnotes at end of table.

CLIMATOLOGICAL DATA FOR WEATHER BUREAU STATIONS FOR MARCH 1947—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station	Pressure: Sea level	Pressure: Departure from normal	Temperature of the air: Mean	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Total degree days	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Greatest in 24 hours	Precipitation: Days with 0.01 inch or more	Wind: Average hourly velocity	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month	Number of days with thunderstorms
MIDDLE SLOPE	*Ft.*	*Ft.*	*Ft.*	*Mb.*	*Mb.*	*Mb.*	°*F.*	°*F.*	°*F.*		°*F.*	°*F.*		°*F.*	°*F.*		°*F.*	%	*In.*	*In.*	*In.*		*Mi.*								*0–10*	*In.*	*In.*	
							40.2	−3.8										68	1.51	.0											5.8			
Denver [2]	5,292	106	113	835.1	1,015.2	+1.0	37.4	−1.9	68	22	48	−2	1	27	35	853	21	62	1.18	+.1	.69	11	7.8	s.	27	n.	18	6	15	10	5.6	17.7	.0	1
Pueblo [1]	4,690	5	36	854.4	1,015.2	+1.7	38.3	−2.5	76	23	54	−4	1	23	49	830	24	66	.62	.0	.29	6	8.2	nw.	50	w.	23	12	8	11	5.1	6.8	.0	1
Concordia	1,392	50	58	966.5	1,017.3	+1.0	37.4	−3.6	80	23	46	6	2	28	36	861	28	72	2.13	+.9	.48	11	9.4	n.	34	s.	31	10	7	14	6.1	14.8	.0	2
Dodge City [1]	2,509	5	58	926.9	1,016.3	+.4	38.6	−4.2	81	23	50	4	2	27	40	819	28	74	1.54	+.6	.84	13	16.8	nw.	49	n.	12	14	5	12	5.3	6.2	.0	2
Wichita [1]	1,358	6	64	967.2	1,016.6	+1.4	39.6	−5.5	76	23	49	4	2	30	35	787	29	70	2.91	−1.2	2.33	9	16.1	n.	40	n.	13	6	12	13	6.3	5.2	.0	4
Oklahoma City [2]	1,214	10	47	972.6	1,016.6	+1.0	46.0	−4.0	84	23	57	14	2	35	36	596	32	66	.48	−1.5	.24	6	10.9	s.	29	nw.	24	7	15	9	5.9	1.7	.0	1
Tulsa [1]	674	10	60	991.9	1,016.6	-----	44.2	−5.2	74	23	55	15	2	34	37	649	32	67	1.71	−1.3	1.11	8	13.0	n.	37	sw.	31	8	8	15	6.2	.1	.0	1
SOUTHERN SLOPE																																		
							50.4	−3.4										60	.88	.0										5.9			
Abilene [1]	1,738	4	59	953.9	1,015.6	+.7	50.0	−5.2	82	23	62	19	2	38	40	469	36	65	1.35	+.1	.72	5	16.7	s.	55	n.	14	6	9	16	6.6	3.7	.0	1
Amarillo [1]	3,676	5	42	887.6	1,015.1	+.5	42.2	−3.1	80	26	56	13	2	29	44	707	30	68	.77	+.1	.39	5	15.3	s.	45	n.	12	8	10	13	6.2	5.4	.0	2
Del Rio	960	63	71	981.0	1,014.9	+.3	59.2	−4.3	90	27	71	33	8	48	33	219	42	58	1.05	+.3	.95	2	11.2	se.	30	nw.	13	11	10	10	5.1	T	.0	1
Roswell	3,566	75	85	891.3	1,013.5	.0	50.4	−.9	85	26	65	18	6	36	48	452	26	47	.35	−.4	.20	3	8.9	s.	34	ne.	14	9	10	12	5.7	3.5	.0	1
SOUTHERN PLATEAU																																		
							55.4	+2.1										43	.31	−.5										4.6			
El Paso [1]	3,778	29	85	884.5	1,011.9	−1.0	55.4	+.5	81	26	68	27	7	42	38	308	26	38	.66	+.3	.52	3	11.5	w.	47	w.	2	13	11	7	4.9	3.8	.0	0
Albuquerque [1]	5,314	5	45	835.1	1,011.2	−2.0	47.4	+1.5	76	26	62	23	16	33	41	543	22	42	.03	−.4	.03	2	10.7	nw.	48	nw.	23	11	12	8	5.0	T	.0	0
Flagstaff	6,907	36	51	788.4	1,015.6	-----	40.8	+4.3	68	25	56	12	5	26	47	749	21	54	.59	−1.6	.37	6	----	w.	----	-------	--	9	11	11	5.8	1.6	.0	2
Phoenix [2]	1,107	39	87	973.6	1,012.5	−1.0	63.6	+2.9	90	25	78	42	5	50	41	82	36	42	T	−.7	T	0	6.8	e.	24	sw.	4	14	7	10	4.7	.0	.0	0
Tucson [1]	2,555	5	39	924.8	1,012.9	-----	59.6	+1.9	88	25	75	35	8	45	42	175	28	36	.39	−.4	.37	2	----	se.	----	-------	--	15	7	9	4.5	.0	.0	1
Yuma	142	9	54	1,007.8	1,012.9	−1.3	65.8	+1.7	90	25	80	43	5	51	40	42	38	44	.18	−.2	.18	1	6.0	w.	20	n.	12	22	7	2	2.8	.0	.0	0
MIDDLE PLATEAU																																		
							43.5	+3.1										55	.44	−.6										5.2			
Reno [1]	4,527	20	52	861.8	1,016.3	−0.3	43.2	+3.2	77	18	61	17	6	25	51	675	24	52	.12	−.7	.06	2	7.7	s.	49	s.	29	10	7	14	5.5	T	0.0	0
Winnemucca	4,339	5	56	867.6	1,016.3	−.6	43.9	+3.9	74	16	59	16	6	29	46	654	25	54	.38	−.6	.13	7	8.1	sw.	29	w.	29	9	9	13	5.7	T	.0	0
Modena	5,473	10	46	831.7	1,013.2	−1.0	41.6	+3.4	70	27	58	16	1	25	43	722	----	----	.52	−.5	.37	5	9.6	sw.	34	w.	23	13	14	4	4.2	.8	.0	2
Salt Lake City [1]	4,227	32	58	866.2	1,015.6	−.7	44.6	+4.6	68	22	56	26	1	34	33	630	30	60	.58	−1.2	.21	8	8.5	se.	38	nw.	23	10	10	11	5.5	2.8	.0	2
Grand Junction	4,602	60	68	858.1	1,015.2	+1.7	44.2	+.6	70	22	57	17	1	32	37	646	26	53	.60	−.2	.34	5	6.3	se.	29	nw.	23	8	12	11	5.3	1.3	.0	3
NORTHERN PLATEAU																																		
							44.6	+3.9										64	1.12	.0										6.5			
Baker [2]	3,471	36	54	895.0	1,016.9	−1.1	41.8	+4.2	72	15	54	18	6	30	40	721	28	64	.75	−.4	.26	8	6.2	se.	23	sw.	3	6	8	17	6.7	2.3	.0	0
Boise [1]	2,739	5	49	919.7	1,016.6	−1.4	44.9	+3.5	69	15	56	20	6	33	36	624	30	62	1.84	+.5	.67	10	9.1	se.	30	nw.	11	7	9	15	6.0	T	.0	0
Pocatello [1]	4,478	5	31	861.8	1,016.3	−.3	40.7	+4.8	66	21	52	5	1	29	36	754	27	63	1.31	.0	.61	8	10.6	sw.	39	sw.	30	7	13	11	6.2	8.8	.0	2
Spokane [1]	1,929	27	42	946.5	1,016.3	−.3	42.6	+2.9	69	16	54	18	6	31	40	693	32	68	1.60	+.4	.69	8	5.6	ne.	26	sw.	30	6	5	20	7.0	1.0	.0	0
Walla Walla	991	57	65	980.4	1,016.6	−.7	50.6	+4.5	74	17	60	28	1	42	33	442	----	----	.82	−.8	.24	12	5.0	s.	23	s.	9	5	11	15	6.4	T	.0	0
Yakima [1]	1,076	58	67	976.6	1,015.9	−.7	47.2	+3.4	79	20	62	21	1	32	47	551	32	62	.42	+.2	.17	8	----	w.	--	-------	--	7	8	16	6.5	T	.0	1
NORTH PACIFIC																																		
							49.5	+3.9										78	4.01	−.1										6.9			
North Head	211	5	55	1,008.5	1,016.3	−1.7	48.8	+3.6	78	15	54	37	6	43	27	507	43	85	5.39	−.2	1.31	15	11.7	n.	45	s.	9	5	7	19	7.1	.0	.0	1
Seattle [2]	125	90	321	1,011.9	1,016.6	−.7	50.1	+3.7	72	15	58	34	5	43	26	462	40	75	2.77	−.3	.85	12	8.4	n.	30	sw.	23	9	8	14	6.0	.0	.0	0
Tacoma	194	172	201	1,009.5	1,016.6	−.7	48.4	+4.2	71	28	56	32	1	41	25	514	----	----	3.45	.0	.73	15	7.3	n.	26	sw.	29	8	8	15	6.2	.0	.0	0
Tatoosh Island	86	9	61	1,013.2	1,016.3	.0	46.6	+3.7	61	17	50	38	7	43	14	570	42	86	5.26	−2.6	1.19	14	13.9	e.	39	ne.	15	5	5	21	7.4	.0	.0	0
Medford [1]	1,329	29	58	968.8	1,016.9	−1.1	50.0	+3.1	82	17	64	28	6	36	44	465	38	69	1.79	+.3	.59	14	----	s.	----	-------	--	7	4	20	6.8	.0	.0	0
Portland, Oreg. [3]	154	68	106	1,010.8	1,016.6	−1.7	52.1	+5.2	78	16	60	37	6	44	29	402	42	76	5.29	+1.4	1.50	14	5.2	nw.	19	e.	27	7	4	20	7.3	.0	.0	3
Roseburg	510	45	76	998.3	1,017.3	−1.7	50.8	+3.7	83	15	61	32	6	40	41	441	42	76	4.14	+.9	1.03	16	3.8	n.	25	sw.	10	3	10	18	7.3	.0	.0	0
MIDDLE PACIFIC COAST																																		
							54.9	+2.3										76	3.36	−.2										6.8			
Eureka	60	72	88	1,015.9	1,018.3	−1.7	50.8	+2.5	67	28	56	36	5	45	22	439	45	82	3.91	−1.3	1.16	16	7.4	n.	34	s.	1	4	3	24	7.8	.0	.0	0
Red Bluff	353	5	26	1,003.4	1,016.3	-----	56.6	+3.0	90	16	67	39	7	46	43	269	43	66	2.62	−.6	.74	13	9.2	nw.	38	se.	2	7	5	19	6.7	.0	.0	1
Sacramento [2]	66	92	115	1,014.6	1,016.9	−.7	56.1	+1.8	77	26	65	39	5	47	31	277	47	76	3.28	+.7	.91	9	7.1	s.	21	sw.	29	10	7	14	6.1	.0	.0	1
San Francisco [3]	155	112	132	1,011.9	1,017.6	−.4	56.0	+1.8	76	14	61	46	5	51	22	278	48	80	3.64	+.5	1.61	10	8.5	w.	25	w.	17	7	5	19	6.8	.0	.0	0
SOUTH PACIFIC COAST																																		
							60.1	+3.8										66	.74	−1.3										5.8			
Fresno [1]	327	5	34	1,004.7	1,016.6	−1.4	59.0	+4.6	87	15	72	36	6	46	40	192	44	64	.46	−1.1	.13	7	5.6	nw.	21	nw.	18	7	13	11	6.0	.0	.0	0
Los Angeles	338	223	250	1,004.4	1,016.3	−.3	60.4	+2.9	87	25	69	44	4	52	35	169	45	64	.79	−2.0	.23	7	6.5	w.	24	nw.	21	7	14	10	5.8	.0	.0	1
San Diego [1]	87	20	55	1,013.2	1,016.6	.0	60.8	+3.8	86	25	69	45	6	52	34	143	48	69	.97	−.8	.55	10	6.5	w.	17	w.	4	8	11	12	5.7	.0	.0	0
ALASKA																																		
Anchorage [1]	132	6	44	1,002.7	1,007.8	-----	30.3	+6.6	52	13	38	10	30	22	29	1,080	24	76	.47	−.08	0.17	12	5.1	n.	26	s.	19	4	3	24	7.8	7.1	2.0	0
Fairbanks [1]	455	4	63	993.9	1,011.5	-----	14.6	−.4	51	19	27	−30	4	2	43	1,560	10	73	.16	−.50	.07	6	5.3	n.	25	e.	13	5	7	19	6.8	1.7	9.1	0
Juneau [1]	80	6	21	1,011.5	1,014.6	-----	35.8	+.9	47	14	42	15	3	30	22	905	30	78	5.80	+1.40	1.44	18	9.9	e.	30	se.	21	3	4	24	8.0	.7	.0	0
Nome	22	25	56	1,014.6	1,015.2	-----	0.4	−8.3	33	18	11	−38	13	−10	37	2,004	−2	82	.10	−.74	.05	6	9.4	n.	43	ne.	2	18	5	8	3.7	1.5	47.0	0
Barrow	29	5	27	1,019.6	1,020.3	-----	-14.3	+.5	7	20	−6	−40	5	−22	27	2,457	−14	99	.36	+.21	.07	12	8.0	ne.	24	ne.	19	10	8	13	5.7	4.1	15.4	0
Bethel	28	5	31	1,010.2	1,011.5	-----	4.2	−6.6	39	18	13	−27	13	−4	33	1,888	2	84	.14	−.69	.08	5	.8	ne.	--	-------	--	11	9	11	6.0	1.5	13.3	0
Cordova	45	5	32	1,007.8	1,009.5	-----	34.2	------	49	20	41	15	31	28	31	952	32	90	10.57	------	1.99	22	----	se.	30	se.	13	8	3	20	7.2	18.0	1.4	0
Gambell	32	5	32	1,016.6	1,018.0	-----	1.7	−4.5	27	31	8	−23	11	−4	24	1,962	1	92	.06	−.68	----	2	14.0	n.	42	n.	18	6	11	14	6.0	.6	1.0	0
Ketchikan	25	69	90	1,014.9	1,015.6	-----	40.4	+2.6	52	14	46	26	3	35	20	761	35	80	16.99	+4.82	7.98	15	5.9	ne.	22	se.	12	2	7	22	8.1	.1	.0	0
Kotzebue	20	5	31	1,015.9	1,016.6	-----	−8.2	−6.6	27	19	0	−37	12	−16	25	2,266	−14	69	.24	+.02	0.12	8	----	e.	--	-------	--	14	4	13	5.2	2.6	18.7	0
McGrath	341	5	31	998.3	1,011.9	-----	6.2	+.4	50	19	18	−32	14	−6	42	1,822	6	83	1.35	+.34	0.42	17	----	nw.	--	-------	--	9	3	19	6.6	31.6	28.1	0
Northway	1,718	5	32	946.8	1,011.5	-----	15.6	+7.2	49	13	31	−27	4	0	51	1,525	12	73	.03	−.28	0.01	3	3.7	nw.	27	-------	14	8	11	12	5.8	0.2	6.6	0

[1] Data are airport records.
[2] Barometric data (adjusted to old city elevation) and hygrometric data from airport; otherwise city office records.
[3] Observations taken hourly.
[4] Pressure (adjusted to old city elevation), temperature, and hygrometric data from airport; otherwise city office records.
[5] Temperature and precipitation from city records, other data from airport.

NOTE.—Except as indicated by notes [1], [2], [4], and [5] data in table are city office records.

SEVERE LOCAL STORMS FOR MARCH 1947

[The table hereunder contains such data as have been received concerning severe local storms that occurred during the month. A revised list will appear in the United States Meteorological Yearbook]

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
	Mar. 1947						
Middle Hudson Valley, N.Y.	2	Late afternoon				Wind	Public utility lines badly broken; buildings unroofed; walls and windows blown in; some small buildings demolished and trees broken. Storm most severe from the Troy area to Hudson, N. Y.
New England Coast, Nantucket, Mass., to southern Maine.	2-3	4 a. m., 2d-3 p. m., 3d.		3	$2,000,000	Northeast gale	10,000-ton freighter, *Oakley L. Alexander* was wrecked at High Head, Cape Elizabeth, Portland, Maine. Vessel total loss; crew saved. Along the New England coast several smaller craft were lost or seriously damaged; 3 fishermen drowned at sea or at points in the coastal area. Summer residences, breakwaters, and power lines at various points along the entire coast, from Nantucket, Mass., to southern Maine, damaged by wind and accompanying high seas. Damage was particularly severe at Hampton Beach and Portsmouth, N. H., and Nantucket, Mass. At the latter place damage was confined to inroads to the coast line.
Massachusetts, western portion, and Vermont, southern and central portions.	3-5					Heavy snow	Snow accumulated to an average depth of from 2 to 4 feet, with a maximum depth of from 6 to 6.5 feet in portions of the Berkshire and Green Mountain areas. Highway traffic in parts of these areas was either interrupted or abandoned. Several small communities were isolated from 2 to 4 days. Minor structural damage from weight of snow on roofs.
Acadia, Iberia, Iberville, and Vermillion Parishes, La.	12	8:30-10:30 p. m.		2	100,000-200,000	Tornado, high wind, hail, and flooding rains.	Tornado damage mostly in Abbeville, La., and vicinity. No details.
Louisiana, south-central and interior of southeastern portions.	12-13	P. m., of 12th-a. m. of 13th.			430,000	Excessive rains and flooding.	Considerable part of damage to crops and other property within a radius of 25 miles of Baton Rouge.
Mount Pleasant, Fla.	13	4:30-5:30 p. m.	300-500	0	15,000	Tornado, torrential rain, electrical.	Storm moved from west-southwest to east-northeast. Most of the damage to tobacco shades and barns, with some damage to tenant houses and other buildings.
Bluefield, Princeton, Athens, Petertown and Lindside, W. Va., and vicinities.	13-14	12 p. m.-3 a. m.	1 50		6,000	Wind	High winds from south to southeast. A parked small airplane at Princeton and one at Twin Gates damaged; roofs blown off; power and telephone lines blown down, causing slight interruption to service. Windows blown out and signs and awnings torn from their supports. Several towns directly across the State line in Virginia also affected.
Clearwater to Sarasota, Fla., Gulf Coast beaches.	19				50,000	Tidal wave and wind squall.	Newspapers describe this storm as "A 9-foot wall of water which swept in from the Gulf of Mexico." Roadways and beach cottage foundations undermined; fishing boats demolished or beached; water mains damaged; electric power and telephone services disrupted. Water subsided rapidly.
Kentucky, entire State	23-24					High wind	Much damage to roofs, windows, wires, and trees. Damage not heavy; amount not estimated.
Wisconsin, entire southeastern portion.	24	P. m.				Snow, glaze, and wind.	2 to 5 inches of wet, clinging snow fell during the afternoon, freezing by night, with strong winds. Overloaded wires snapped. Poles down in places in Kenosha, Milwaukee, and Walworth Counties, interrupting power and communication services several hours. Icy roads snarled traffic, causing injuries to several persons. A falling tree damaged 3 automobiles and injured a person.
Indiana, northern and central portions.	24				50,000	Wind	General wind with scattered damage, mostly to trees, wires, and signs. House in Mishawaka unroofed.
Curwensville, Pa.	24					Thunderstorm	Transformer of power line hit by lightning.
Indiana, Pa.	24					do	Power service interrupted more than 2 hours.
Philipsburg, Pa.	24-25					Thunderstorm and wind.	Electric and telephone wires snapped.
South Carolina	24-25	Afternoon of 24th-late night of 25th.			13,000	Wind	High winds over the entire State on the afternnon of the 25th, with gusts approaching 80 miles per hour in the Spartanburg area. Damage, though widespread, was confined mainly to roofs, smokestacks, and loose installations.
Ohio, northeastern counties	24-26	P. m. of 24th-part of 26th.		3		High winds and drifting snow.	Heavy damage to trees and wires. Buildings unroofed, windows broken, and signs down. Roads blocked by drifting snow for 2 days. Wind velocities unusually high, and barometer readings lowest on record in some localities.
West Virginia, entire State	24-26	P. m. of 24th-p. m., of 26th.		2	100,000	do	Long, continued, high, southwest to northwest winds, with gusts estimated as high as 70 miles per hour, associated with intense low, the center of which passed northeastward through northwestern Ohio. The cold front raced eastward through the State during the night of the 24th-25th. Generally light to locally moderate damage throughout the northern and central portions of the State. Many power and telephone lines blown down; scores of buildings of various kinds removed from their foundations and badly damaged. Windows cracked or shattered; signs blown down; numerous trees damaged, some uprooted. 3 small parked airplanes at Clarksburg damaged, and 1 at Charlestown overturned. Float planes at Fairmont blown ashore and damaged; 2 light planes at Petersburg damaged; small planes wrecked just south of Laneville, W. Va.
Virginia	25	10 a. m.-6 p. m.				Wind	Minor damage throughout State to roofs, trees, power lines, chimneys, barns, sheds, and timber.
Charleroi, Pa.	25					do	Damage to power and telephone service; many trees broken and uprooted.
Derry and Ebensburg, Pa.	25					do	Windows blown in, trees uprooted, buildings unroofed, large electric signs blown down, and power lines snapped.
Frostburg, Md.	25					do	Roof of small factory partly torn from building.
Galeton, Pa.	25					do	Damage to roofs.
Harrisburg, Pa.	25					do	Gusts up to 60 miles per hour recorded. 2 persons injured when struck by tile ripped loose by the wind. Many roofs blown off, windows smashed, and chimneys blown over; telephone poles ripped off, trees felled, and power lines damaged.
Johnstown, Pa.	25					do	Winds up to 73 miles per hour recorded. Many roofs blown off, trees uprooted, telephone and power lines down, and numerous windows blown out. Damage in thousands of dollars.
Latrobe, Pa.	25				5,000	Thunderstorm and wind.	A $5,000 neon sign battered; plate glass windows loosened, and trees and poles blown over. Damage in thousands of dollars.
Philadelphia, Pa.	25					Wind	A 2-year-old girl critically injured when carried 12 feet to the pavement by wind.
Pittsburgh, Pa.	25					do	Many roofs blown off and plate glass windows shattered by high winds. Damage in millions of dollars.
Somerset, Pa.	25					do	Buildings and silos damaged.
Spring Grove, Pa.	25					do	Damage to roofs, wires, and buildings by gusts up to 60 miles per hour.
Uniontown, Pa.	25					do	Damage to power and telephone lines, roofs, and chimneys.
Vandergrift, Pa.	25			1		do	High tension wire blew down, killing a man. Many buildings unroofed and wires blown down. Damage in thousands of dollars.
Washington, Pa.	25					Thunderstorm and winds.	Buildings demolished, roofs lifted, power lines affected, and store windows shattered.
Wellsville, Pa.	25					Wind	Trees uprooted and shingles torn from a barn.
Westernport, Md.	25					do	Plate glass window blown in; parts of roofs blown off; trees blown down.

See footnote at end of table.

SEVERE LOCAL STORMS FOR MARCH, 1947—Continued

Place	Date	Time	Width of path, yards	Loss of life	Value of property destroyed	Character of storm	Remarks
	Mar. 1947						
Baltimore, Md., and vicinity	25–26	4:30 a. m., of 25th–8 p. m., of 26th.				Wind	Large plate glass windows broken; signs torn off; streets littered with broken tree branches and other debris. 2 barges overturned in the Patapsco River. Damage not estimated.
Benton Harbor, Mich	25–26	6:30 p. m., of 25th–7:10 p. m., of 26th.	[1] 200		$10,000–15,000	Rain, snow, and wind.	Traffic blocked in most sections of the State, closing schools, isolating towns, and causing damage to vehicles and a loss of milk that could not be marketed. Actual storm damage not great, but losses due to storm great. Damage to signs and roofs; cooperative observer's shelter blown over. Damage estimated from wind alone; path 200 miles long.
Curwensville, Pa	25–26					Wind	Trees uprooted; power lines down; chimneys blown off, and buildings unroofed.
Springs, Pa	25–26					do	Trees uprooted and buildings unroofed.
Pensacola, Fla	30	3:15–3:45 a. m.			20,000	Wind, hail, and rain	Storm covered a large area in the northern portion of the city, with wind velocities estimated at 60 miles per hour. Maximum wind velocity recorded at the Weather Bureau Office was 26 miles per hour, while at the Naval Air Station gusts of about 50 miles an hour were recorded. At the Weather Bureau Office rainfall of 0.75 inch fell during the 5-minute period, 3:25 to 3:30 a. m. Hail was heavy in the northeastern section of the city, with hailstones up to ¾-inch in diameter accumulating on the ground to a depth of from 2 to 4 inches.
Ocala, Fla	30	5:30 p. m.	[1] 1–2		5,000	Wind, hail, rain, electrical.	Roofs on several houses damaged; tree blown down; plate glass windows broken; billboards and signs down.

[1] Miles instead of yards.

SOLAR RADIATION AND SUNSPOT DATA FOR MARCH 1947

[Solar Radiation Investigations Section, I. F. HAND in Charge]

SOLAR RADIATION OBSERVATIONS

Explanations of the tables and references to descriptions of instruments, stations, and methods of observation, and to summaries of data, are given in the MONTHLY WEATHER REVIEW, vol. 72, No. 1, January 1944, page 43. A list of pyrheliometric stations is also given on page 45 of the same issue.

Beginning with this issue all values of air masses have been corrected for elevation above sea level through the use of the formula

$$m_c = \frac{(B-e)m_s}{76.0}$$

where m_c is the corrected air mass,
m_s is the sea level air mass,
B is the barometric pressure (in cm.) of the station,
and e is the vapor pressure.

TABLE 1.—*Solar radiation intensities during March 1947*

[GRAM CALORIES PER MINUTE PER SQUARE CENTIMETER OF NORMAL SURFACE]

Date	Sun's zenith distance: 7:30 a. m.[1]	78.7° A. M.	75.7° A. M.	70.7° A. M.	60.0° A. M.	0.0°	60.0° P. M.	70.7° P. M.	75.7° P. M.	78.7° P. M.	1:30 p. m.[1]
MADISON, WIS.											
Air mass		4.81	3.84	2.88	1.92	0.96*	1.92	2.88	3.84	4.81	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 4	2.1	.....	0.92	1.14	1.31	1.45	.....	.....	.....	.....	3.7
Mar. 5	2.3	0.87	.98	1.11	1.24	1.44	.....	.....	.....	.....	3.5
Mar. 6	3.5	.61	.71	.....	1.11	.....	.....	.....	.....	.....	4.6
Mar. 10	3.3	.83	1.02	1.14	1.26	.....	.....	.....	.....	.....	4.8
Mar. 16	2.3	.59	.69	.80	1.01	1.45	.....	.....	.....	.....	2.7
Mar. 18	2.5	.88	.91	1.16	1.24	1.51	.....	.....	.....	.....	3.8
Mar. 19	3.1	.59	.68	.90	.81	1.47	.....	.....	.....	.....	4.0
Mar. 20	3.8	.75	.90	1.04	1.25	1.42	.....	.....	.....	.....	4.4
Mar. 26	2.3	.90	1.04	1.19	1.37	1.53	.....	.....	.....	.....	3.3
Mar. 27	2.9	.....	.90	1.11	1.35	1.51	.....	.....	.....	.....	3.3
Means		.75	.88	1.07	1.20	1.47	.....	.....	.....	.....	.....
Departures		−.05	−.07	−.03	−.08	−.04	.....	.....	.....	.....	.....
LINCOLN, NEBR.											
Air mass		4.77	3.81	2.86	1.91	0.95*	1.91	2.86	3.81	4.77	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 6	2.9	.....	.....	0.98	1.15	.....	.....	.....	.....	.....	3.3
Mar. 21	4.0	.....	1.01	1.14	1.29	1.52	1.22	1.14	1.01	0.94	4.4
Mar. 25	3.5	0.96	1.05	1.16	.....	.....	.....	.....	.....	.....	4.6
Mar. 28	4.8	.....	.....	.....	.....	1.46	1.18	.96	.76	.....	5.8
Mar. 29	4.6	.....	.....	.....	1.27	1.45	1.16	1.01	.90	.79	4.6
Mar. 31	10.2	.....	.....	.....	.....	.....	1.16	.94	.77	.66	10.0
Means		(.96)	(1.03)	1.09	1.24	1.47	1.18	1.01	.86	.80	.....
Departures		+.14	+.10	+.01	−.03	−.03	−.08	−.07	−.07	−.01	.....
BLUE HILL, MASS.											
Air mass		4.86	3.89	2.92	1.94	0.97*	1.94	2.92	3.89	4.86	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 1	2.6	1.00	1.07	1.17	.....	.....	1.22	1.00	.....	.....	3.0
Mar. 4	3.5	.74	.85	1.02	.....	.....	.....	.....	.....	.....	3.0
Mar. 5	3.8	.....	.....	.69	0.90	.....	.....	.....	.....	.....	3.1
Mar. 6	4.8	1.00	1.08	1.20	1.35	.....	.....	1.18	1.08	1.00	4.9
Mar. 7	4.6	.94	1.03	1.16	1.35	.....	.....	.....	.....	.....	3.9
Mar 9	4.4	.92	1.03	1.12	1.31	.....	.....	.....	.....	.....	3.3
Mar. 12	4.7	.....	.....	1.09	1.20	.....	1.24	1.11	1.02	.95	4.5
Mar. 13	3.9	.89	1.00	1.13	1.29	.....	.....	.....	.77	.....	3.8
Mar. 15	4.1	.89	1.02	1.12	.....	.....	.....	.90	.73	.59	4.7
Mar. 16	2.5	.93	1.02	1.12	1.28	.....	.....	.89	.70	.65	2.6

See footnotes at end of table.

TABLE 1.—*Solar radiation intensities during March 1947*—Con.

[GRAM CALORIES PER MINUTE PER SQUARE CENTIMETER OF NORMAL SURFACE]

Date	Sun's zenith distance: 7:30 a. m.[1]	78.7° A. M.	75.7° A. M.	70.7° A. M.	60.0° A. M.	0.0°	60.0° P. M.	70.7° P. M.	75.7° P. M.	78.7° P. M.	1:30 p. m.[1]
BLUE HILL, MASS.—Continued											
Air mass		4.86	3.89	2.92	1.94	0.97*	1.94	2.92	3.89	4.86	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 17	3.0	.44	.54	.72	.....	.....	.....	.....	.....	.....	2.5
Mar. 18	3.0	.90	1.00	1.11	1.31	.....	1.13	.93	.....	.69	2.2
Mar. 19	2.9	.95	1.05	1.18	1.35	.....	1.25	1.04	.76	.67	2.2
Mar. 20	4.0	.67	.83	.98	1.15	.....	.....	.....	.....	.....	3.2
Mar. 23	4.7	.....	.46	.64	.....	.....	.....	.....	.....	.....	3.1
Mar. 27	2.6	.....	1.03	1.16	.....	.....	.....	.....	1.13	.92	.84	2.3
Mar. 30	5.3	.79	.93	.....	.....	.....	1.30	1.06	.89	.70	2.6
Mar. 31	2.4	.94	1.05	1.15	1.34	.....	1.35	1.19	1.04	.93	2.5
Means		.86	.94	1.04	1.26	.....	1.25	1.04	.88	.78	.....
Departures		−.01	−.02	−.04	+.02	.....	+.02	.00	−.05	−.04	.....
TABLE MOUNTAIN, CALIF.											
Air mass		3.76	3.01	2.26	1.51	0.75*	1.51	2.26	3.01	3.76	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 6	.....	.....	.....	.....	1.56	.....	1.51	1.33	.....	.....	.....
Mar. 13	.....	.....	.....	1.42	1.55	.....	.....	.....	.....	.....	.....
Mar. 17	.....	.....	.....	.....	.....	.....	1.50	1.33	1.19	1.14	.....
Mar. 19	.....	.....	.....	1.34	1.51	.....	1.47	1.33	1.20	1.11	.....
Mar. 20	.....	.....	.....	.....	.....	.....	1.46	1.30	1.21	1.10	.....
Mar. 21	.....	.....	.....	1.32	1.47	.....	1.46	1.32	1.20	1.12	.....
Mar. 22	.....	.....	.....	1.30	1.46	.....	1.42	.....	.....	.....	.....
Mar. 25	.....	.....	.....	1.30	1.48	.....	1.45	1.31	.....	.....	.....
Mar. 27	.....	.....	.....	.....	1.51	1.65	1.50	1.36	1.25	1.14	.....
Means	.....	.....	.....	1.34	1.51	(1.65)	1.47	1.33	1.21	1.12	.....
CLIMAX, COLO.											
Air mass		3.24	2.59	1.94	1.29	0.65*	1.29	1.94	2.59	3.24	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 3	.....	.....	.....	.....	1.49	.....	.....	.....	.....	.....	.....
Mar. 4	.....	.....	.....	.....	1.46	.....	.....	.....	.....	.....	.....
Mar. 6	.....	.....	.....	.....	1.47	.....	.....	.....	.....	.....	.....
Mar. 9	.....	.....	.....	.....	1.43	.....	.....	.....	.....	.....	.....
Mar. 12	.....	1.16	1.25	1.35	1.49	1.63	.....	.....	.....	.....	.....
Mar. 14	.....	.....	.....	.....	1.47	.....	.....	.....	.....	.....	.....
Mar. 15	.....	.....	.....	.....	1.45	.....	.....	.....	.....	.....	.....
Mar. 18	.....	.....	.....	.....	1.43	.....	.....	.....	.....	.....	.....
Mar. 19	.....	.....	.....	.....	1.37	.....	.....	.....	.....	.....	.....
Mar. 22	.....	.....	.....	.....	1.43	.....	.....	.....	.....	.....	.....
Mar. 23	.....	.....	.....	.....	1.40	.....	.....	.....	.....	.....	.....
Mar. 27	.....	.....	.....	.....	1.40	.....	.....	.....	.....	.....	.....
Mar. 29	.....	1.19	1.27	1.38	1.49	1.62	.....	.....	.....	.....	.....
Mar. 31	.....	.....	.....	.....	1.44	.....	.....	.....	.....	.....	.....
Means	.....	(1.18)	(1.26)	(1.36)	1.44	(1.62)	.....	.....	.....	.....	.....
BOSTON, MASS											
Air mass		4.96	3.96	2.97	1.98	0.99*	1.98	2.97	3.96	4.96	
e.											
	mb.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mb.
Mar. 18	2.7	.....	.....	.....	1.11	.....	.....	.....	.....	.....	2.2
Mar. 19	2.3	.....	.....	.....	.....	.....	1.13	0.85	0.74	.....	2.2
Mar. 20	4.2	.....	.....	.....	.84	.....	.....	.....	.....	.....	5.1
Mar. 31	2.5	0.56	0.62	0.69	1.18	1.21	.....	.....	.....	.....	2.7
Means		(.56)	(.62)	(.69)	1.04	(1.21)	(1.13)	(.85)	(.74)	.....	.....
Departures		+.03	.00	−.11	+.04	.00	+.05	−.03	+.03	.....	.....
RATIO, BOSTON/BLUE HILL ON COMPARABLE DATES											
	.....	(0.60)	(0.59)	(0.60)	0.82	.....	(0.90)	(0.82)	(0.97)	.....	.....

*Extrapolated.

[1] 75th meridian time.

TABLE 2.—*Daily totals and weekly means of solar radiation (direct+diffuse) received on a horizontal surface*

[Gram calories per square centimeter]

Date	Washington, D. C.	Madison, Wis.	Lincoln, Nebr.	East Lansing, Mich.	New York, N. Y.	Fresno, Calif.	Columbia, Mo.	Boston, Mass.	Nashville, Tenn.	Twin Falls, Idaho	La Jolla, Calif.	Riverside, Calif.	Blue Hill, Mass.	Newport, R. I.	Salt Lake City, Utah	Put-in-Bay, Ohio	State College, Pa.	Davis, Calif.	Tooele, Utah	New Orleans, La.	Toronto, Canada	Ithaca, N. Y.	Boulder, Colo.	Soda Springs, Calif.	East Wareham, Mass.
1947	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*	*cal.*
Feb. 26	309	243	253	340	201	374	415	336	384	306	-----	212	410	388	302	301	272	218	389	100	206	174	313	328	363
Feb. 27	386	418	312	272	294	260	392	256	362	265	340	98	323	239	136	267	231	305	167	173	130	270	336	203	294
Feb. 28	346	348	209	378	326	376	76	217	208	282	401	306	348	333	252	414	352	338	455	61	176	278	209	363	334
Mar. 1	116	259	276	182	184	173	246	315	34	281	367	377	363	387	380	116	94	106	412	244	103	311	485	43	364
Mar. 2	126	253	387	274	42	444	455	6	157	293	305	376	35	30	202	256	59	302	328	484	29	86	346	213	40
Mar. 3	381	308	350	332	241	127	375	163	404	169	445	485	156	153	273	403	257	197	280	345	102	167	506	93	162
Mar. 4	463	399	284	328	258	388	372	275	254	318	378	338	302	327	126	329	307	342	442	132	183	232	144	299	247
Means	304	318	296	301	221	309	333	224	258	273	373	313	277	265	239	298	225	258	353	220	133	217	334	220	258
Departures	+26	+46	−10	+70	−34	−46	+50	−11	+1	−14	−7	−35	−10	−18	-----	+64	−5	−53	−1	−56	−61	−9	+11	-----	−17
Mar. 5	496	399	123	279	399	456	60	305	64	190	360	432	337	314	294	374	433	503	464	248	238	121	270	439	314
Mar. 6	482	299	293	194	378	461	305	211	92	416	471	500	341	445	287	358	227	352	444	45	256	165	426	396	335
Mar. 7	385	222	246	238	417	455	226	263	71	194	410	476	321	362	304	237	421	358	368	70	331	334	309	165	266
Mar. 8	246	287	201	364	154	350	458	241	265	239	321	110	217	173	191	259	425	264	431	159	411	340	363	233	182
Mar. 9	427	381	227	207	391	371	478	314	459	284	445	475	334	400	315	262	389	114	525	227	328	218	455	187	262
Mar. 10	470	353	135	436	267	318	364	123	294	200	389	454	163	239	206	483	160	207	245	431	380	209	211	282	170
Mar. 11	462	168	76	440	337	426	297	209	470	347	428	500	225	214	288	460	340	515	444	446	304	254	142	539	241
Means	424	301	186	308	335	405	313	238	244	267	403	421	277	307	269	348	342	330	417	232	321	235	310	320	253
Departures	+111	+4	−136	+61	+60	+3	+11	−22	−38	−78	−18	+3	−18	+5	-----	+74	+62	−31	+21	−87	+79	−17	−47	-----	−28
Mar. 12	448	230	23	356	398	510	87	349	363	458	472	542	453	449	454	402	429	526	550	247	305	304	295	516	373
Mar. 13	202	20	305	104	293	517	41	387	79	410	492	529	457	445	472	95	251	516	536	119	184	254	434	539	419
Mar. 14	288	329	325	142	69	518	179	52	162	448	478	524	57	54	458	92	174	523	547	504	86	79	188	542	67
Mar. 15	491	263	461	260	426	518	253	410	133	435	483	508	452	448	486	330	151	532	555	510	297	156	556	541	436
Mar. 16	390	472	210	340	428	380	478	424	98	454	281	315	474	476	489	252	247	468	559	538	406	175	553	547	458
Mar. 17	354	450	349	240	274	512	584	280	116	454	429	503	296	230	486	314	251	506	544	527	259	197	513	550	260
Mar. 18	402	435	297	402	457	488	200	420	460	467	146	92	385	455	485	241	272	162	556	240	327	185	364	309	475
Means	368	314	282	264	335	492	260	332	202	446	397	430	368	365	476	246	254	462	549	384	266	193	414	506	355
Departures	+48	+4	−54	+23	+56	+84	−50	+42	−79	+112	+11	+38	+63	+53	-----	−21	−10	+77	+101	+32	+10	−42	+20	-----	+57
Mar. 19	309	439	126	414	371	294	289	445	406	459	-----	188	510	501	498	360	329	331	548	142	413	281	431	561	477
Mar. 20	461	416	340	359	230	425	306	345	71	470	-----	96	430	435	509	356	348	514	559	543	293	178	522	570	426
Mar. 21	280	225	537	153	301	487	150	300	479	423	250	156	334	289	502	157	238	362	576	493	100	290	527	567	155
Mar. 22	285	292	520	299	121	516	535	418	529	316	259	189	430	416	416	482	246	320	472	489	366	130	544	192	458
Mar. 23	348	308	449	207	199	588	184	419	80	412	415	202	491	481	-----	208	246	537	449	247	321	140	438	390	452
Mar. 24	196	52	429	32	57	525	212	77	297	504	538	575	101	120	491	108	116	514	589	516	18	103	544	553	120
Mar. 25	366	408	383	295	230	496	544	179	478	426	519	556	229	322	455	170	151	368	585	581	68	86	571	458	287
Means	321	306	398	251	216	476	317	312	334	430	396	280	361	366	478	263	239	421	540	430	226	173	511	470	339
Departures	−21	−27	+18	−53	−118	+28	−25	−12	+10	+34	−46	−110	−13	−35	-----	−60	−82	+22	+71	+69	−43	−127	+71	-----	+7
Mar. 26	413	537	232	395	308	579	390	259	485	491	465	528	340	394	306	306	428	566	376	532	435	196	486	565	353
Mar. 27	408	508	510	513	361	267	445	416	29	521	465	351	514	395	541	491	316	284	561	501	401	261	584	184	333
Mar. 28	559	315	576	212	508	571	584	411	534	505	335	368	474	488	387	332	483	387	503	420	106	257	430	239	412
Mar. 29	376	531	573	219	221	472	614	185	488	334	544	565	228	315	509	247	128	316	618	248	141	142	310	156	334
Mar. 30	606	298	387	532	518	550	611	462	501	429	-----	346	509	539	366	587	494	276	524	238	509	223	555	312	566
Mar. 31	548	164	402	338	524	602	9	510	570	369	-----	530	598	594	486	440	439	534	628	334	505	389	578	618	558
Apr. 1	505	242	515	192	216	437	-----	383	175	324	359	327	474	488	359	94	352	484	344	93	149	211	464	286	479
Means	488	371	456	343	380	497	-----	375	397	425	433	430	448	459	422	357	377	407	508	338	321	240	487	337	434
Departures	+130	+12	+72	+15	+48	+29	-----	+18	+40	+53	−48	+15	+54	+69	-----	+4	+2	−61	+57	−26	+25	−62	+24	-----	+63

ACCUMULATED DEPARTURES ON APR. 1, 1947

	+2,898	+497	−1,302	+973	+329	+385	-----	+21	−182	+1,617	−784	+1,477	+266	−357	-----	−224	+1,211	−1,218	+3,682	-----	+21	−602	+609	-----	-----

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR MARCH 1947

By Lucy T. Day

[Equatorial Division, U. S. Naval Observatory]

Communicated by the Superintendent, U. S. Naval Observatory.] All measurements and spot counts were made at the Naval Observatory from plates taken at the observatories indicated. Difference in longitude is measured from the central meridian, positive toward the west. Latitude is positive toward the north. Areas are corrected for foreshortening and expressed in millionths of Sun's hemisphere. For each day under Mount Wilson group number, longitude, latitude, area of spot or group, and spot count, are included respectively: number of groups, assumed longitude of center of the disk, assumed latitude of center of the disk, total areas of spots and groups, and total spot count.

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1947	h m		°	°	°	°				
Mar. 1	16 26	8435	−81	121	−4	81	145	1	G	Mt. Wilson.
		8434	−38	164	−11	38	267	11		
		8433	−34	168	−16	35	218	1		
		8428	−18	184	−7	18	170	1		
		8425	−9	193	−12	11	61	5		
		8425	−5	197	−11	7	109	6		
		8424	+18	220	+22	33	485	11		
		8423	+20	222	+25	37	48	3		
		8421	+21	223	+19	33	73	2		
		8424	+26	228	+21	38	388	7		
		8416	+67	269	−10	67	48	1		
		8426	+71	273	+16	73	121	1		
		(10)		(202)	(−7)		2,133	50		
2	13 34	8435	−70	120	−4	70	194	1	P	Do.
		8434	−30	160	−12	30	73	3		
		8434	−24	166	−10	24	170	6		
		8433	−22	168	−16	23	242	1		
		8428	−7	183	−7	7	145	1		
		8425	+5	195	−12	7	218	12		
		8424	+30	220	+22	42	436	3		
		8423	+32	222	+25	45	121	4		
		8421	+34	224	+19	43	61	2		
		8424	+37	227	+22	47	339	4		
		(8)		(190)	(−7)		1,999	37		
3	10 29	8438	−88	90	−23	88	388	3	VG	U. S. Naval.
		8438	−87	91	−25	87	582	7		
		8436	−70	108	−19	71	12	6		
		8435	−58	120	−4	58	194	1		
		8434	−18	160	−13	20	36	12		
		8434	−11	167	−10	11	121	4		
		8433	−10	168	−17	14	242	1		
		8428	+6	184	−8	6	145	1		
		8425	+15	193	−12	15	267	35		
		(*)	+38	216	+29	51	12	8		
		8424	+40	218	+22	49	485	13		
		8423	+44	222	+24	53	218	12		
		8421	+48	226	+18	53	36	3		
		8424	+49	227	+22	56	339	4		
		(11)		(178)	(−7)		3,077	110		
4	11 33	8442	−85	80	−15	85	97	1	G	Do.
		8441	−80	85	+13	82	582	4		
		8438	−80	85	−27	80	242	2		
		8438	−75	90	−24	76	1,261	8		
		8438	−65	100	−25	66	12	1		
		8436	−58	107	−19	58	121	3		
		8435	−45	120	−4	45	194	2		
		8440	−13	152	−6	13	12	3		
		8434	+3	168	−10	4	109	3		
		8433	+3	168	−16	10	267	1		
		8437	+16	181	−25	24	36	4		
		8428	+19	184	−8	19	121	1		
		8439	+20	185	+17	31	24	2		
		8425	+26	191	−12	27	121	5		
		8425	+30	195	−10	30	388	5		
		8424	+54	219	+23	60	436	9		
		8423	+58	223	+24	63	145	6		
		8424	+63	228	+23	68	291	1		
		(14)		(165)	(−7)		4,459	61		
5	10 35	8441	−74	78	+12	76	436	2	G	Do.
		8442	−71	81	−15	71	242	1		
		8438	−68	84	−27	69	194	3		
		8441	−66	86	+13	68	873	4		
		8438	−59	93	−24	60	2,133	14		
		8438	−52	100	−26	54	48	4		
		8436	−44	108	−19	45	218	7		
		8435	−31	121	−4	32	194	1		
		8440	−1	151	−8	2	12	4		
		8434	+15	167	−11	15	97	5		
		8433	+15	167	−16	17	315	1		
		8437	+27	179	−26	32	48	7		
		8428	+32	184	−8	32	194	1		
		8439	+33	185	+17	41	145	12		
		8425	+39	191	−12	39	388	10		
		8425	+44	196	−10	44	291	5		
		8424	+67	219	+23	71	485	7		
		8424	+76	228	+23	80	291	1		
		(13)		(152)	(−7)		6,604	89		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR MARCH 1947—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1947	h m		°	°	°	°				
Mar. 6	11 29	8445	−81	57	−12	81	97	1	G	U. S. Naval.
		8441	−60	78	+12	63	436	3		
		8442	−56	82	−14	56	194	1		
		8441	−52	86	+13	55	873	12		
		8438	−49	89	−24	50	1,551	8		
		8438	−43	95	−24	45	1,115	4		
		8436	−31	107	−19	33	412	6		
		8435	−18	120	−4	18	194	1		
		8440	+12	150	−7	12	16	1		
		8434	+27	165	−11	27	48	4		
		8433	+29	167	−15	30	339	1		
		8437	+40	178	−26	43	73	3		
		8428	+45	183	−7	45	145	1		
		8439	+46	184	+17	51	194	6		
		8425	+52	190	−11	52	630	10		
		8425	+59	197	−9	59	436	6		
		8424	+88	226	+23	89	97	3		
		(14)		(138)	(−7)		6,850	71		
7	12 51	8446	−71	53	−13	72	145	1	G	Do.
		8445	−69	55	−10	69	145	5		
		8441	−45	79	+13	49	436	5		
		8442	−42	82	−14	42	194	3		
		8444	−41	83	−5	41	6	1		
		8441	−38	86	+14	43	630	6		
		8438	−38	86	−25	41	485	15		
		8438	−37	87	−22	40	1,454	5		
		8441	−34	90	+14	39	436	3		
		8438	−29	95	−24	32	1,600	7		
		8436	−20	104	−20	23	97	2		
		8436	−14	110	−17	17	194	8		
		8435	−4	120	−4	6	194	1		
		8434	+42	166	−11	42	24	4		
		8433	+42	166	−15	42	291	2		
		8439	+59	183	+17	63	242	3		
		8428	+59	183	−7	59	145	1		
		8425	+70	194	−11	70	1,018	16		
		(13)		(124)	(−7)		7,736	88		
8	12 39	8446	−58	53	−16	58	121	1	F	Mt. Wilson.
		8445	−56	55	−10	56	97	8		
		8447	−40	71	−23	42	48	5		
		8441	−32	79	+14	37	291	9		
		8442	−28	83	−15	30	242	11		
		8438	−28	83	−24	32	194	11		
		8441	−26	85	+14	33	582	7		
		8438	−22	89	−23	27	2,279	5		
		8441	−21	90	+14	30	533	12		
		8438	−15	96	−23	22	1,794	3		
		8436	−6	105	−19	13	339	8		
		8435	+10	121	−4	11	194	1		
		8433	+55	166	−15	55	206	1		
		8434	+57	168	−9	57	12	1		
		8439	+73	184	+18	77	242	3		
		8428	+74	185	−6	74	145	1		
		(12)		(111)	(−7)		7,319	87		
9	11 33	8449	−85	14	−19	85	48	1	G	Do.
		8446	−45	54	−16	46	97	1		
		8445	−42	57	−10	42	73	5		
		8447	−27	72	−22	31	24	1		
		8441	−20	79	+13	28	242	15		
		8438	−17	82	−24	24	145	16		
		8442	−15	84	−15	17	218	11		
		8441	−11	88	+14	24	1,261	20		
		8438	−10	89	−23	19	2,327	6		
		8438	−2	97	−23	17	1,939	8		
		8436	+7	106	−19	13	242	10		
		8448	+15	114	−25	23	24	4		
		8435	+23	122	−4	24	194	1		
		8433	+70	169	−15	71	206	1		
		8434	+73	172	−9	73	12	1		
		8437	+76	175	−24	76	48	2		
		8428	+88	187	−7	88	145	1		
		(14)		(99)	(−7)		7,245	104		
10	11 20	8450	−80	6	+16	82	48	1	VG	U. S. Naval.
		8449	−71	15	−19	72	48	1		
		8446	−32	54	−15	33	97	6		
		8445	−27	59	−10	27	24	2		
		8447	−18	68	−24	24	12	2		
		8441	−7	79	+13	22	194	10		
		8442	−4	82	−14	9	194	6		
		8438	−3	83	−23	17	145	17		
		8441	+3	89	+14	22	1,067	19		
		8438	+3	89	−24	18	2,376	7		
		8438	+12	98	−23	20	2,182	11		
		8436	+19	105	−20	22	267	8		
		8448	+29	115	−25	32	12	4		
		8435	+34	120	−5	34	194	1		
		8433	+81	167	−15	81	121	3		
		(12)		(86)	(−7)		6,981	98		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR MARCH 1947—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1947	h m		°	°	°	°				
Mar. 11	11 3	8450	−66	7	+16	69	36	1	G	U. S. Naval.
		8449	−58	15	−19	58	97	1		
		8446	−20	53	−13	21	97	1		
		8445	−13	60	−11	13	48	2		
		8447	−3	70	−23	17	145	6		
		8441	+7	80	+13	21	194	11		
		8442	+10	83	−15	12	194	7		
		8438	+10	83	−23	19	145	11		
		8438	+16	89	−22	21	2,376	6		
		8441	+16	89	+14	27	873	13		
		8438	+25	98	−23	29	1,988	10		
		8436	+32	105	−20	34	339	9		
		8435	+48	121	−5	48	194	1		
		(10)		(73)	(−7)		6,726	79		
12	10 58	8450	−52	8	+17	56	24	2	G	Do.
		8449	−45	15	−18	46	97	1		
		8446	−7	53	−13	9	97	7		
		8445	+2	62	−10	3	48	4		
		8447	+10	70	−23	19	121	5		
		8441	+21	81	+13	28	97	9		
		8442	+22	82	−16	22	121	5		
		8438	+27	87	−24	31	2,666	17		
		8441	+29	89	+14	35	630	21		
		8441	+32	92	+12	38	218	4		
		8438	+38	98	−24	41	1,745	2		
		8436	+46	106	−21	47	388	7		
		8435	+61	121	−6	61	194	1		
		(10)		(60)	(−7)		6,446	85		
13	9 51	8450	−39	8	+17	45	12	1	G	Do.
		8449	−31	16	−19	33	97	3		
		8446	+7	54	−13	9	73	1		
		8445	+16	63	−10	16	24	5		
		8447	+23	70	−23	27	97	3		
		8441	+34	81	+13	40	73	7		
		8442	+37	84	−15	38	121	11		
		8438	+40	87	−24	42	2,909	15		
		8441	+42	89	+15	48	436	12		
		8441	+46	93	+13	50	218	1		
		8438	+51	98	−24	52	1,357	7		
		8436	+58	105	−19	59	242	3		
		8435	+75	122	−6	75	194	1		
		(10)		(47)	(−7)		5,853	70		
14	13 34	8449	−18	14	−19	21	73	1	VG	Do.
		8453	−6	26	−18	13	6	1		
		8446	+21	53	−14	22	97	1		
		8445	+29	61	−11	29	24	8		
		8447	+35	67	−25	39	6	1		
		8447	+41	73	−23	43	73	2		
		8441	+50	82	+13	54	73	7		
		8442	+51	83	−15	51	73	8		
		8438	+56	88	−25	57	2,376	10		
		8441	+57	89	+14	60	339	6		
		8441	+61	93	+13	64	218	1		
		8438	+67	99	−24	67	1,454	8		
		8436	+72	104	−19	72	242	1		
		(9)		(32)	(−7)		5,054	55		
15	10 25	8456	−81	299	−19	81	97	2	F	Do.
		8455	−79	301	−13	79	436	3		
		8454	−65	315	−15	65	48	2		
		8449	−6	14	−18	13	97	4		
		8446	+33	53	−13	33	97	5		
		8447	+53	73	−23	54	24	1		
		8441	+61	81	+13	65	48	2		
		8442	+64	84	−15	64	12	1		
		8438	+67	87	−25	68	2,376	7		
		8441	+68	88	+14	70	339	7		
		8441	+73	93	+13	76	194	1		
		8438	+78	98	−24	78	1,406	4		
		8436	+83	103	−19	83	194	1		
		(10)		(20)	(−7)		5,368	40		
16	11 44	8456	−68	298	−19	69	97	1	P	Do.
		8455	−63	303	−14	63	242	1		
		8454	−49	317	−15	49	48	6		
		8449	+9	15	−18	15	97	4		
		8452	+27	33	+22	40	73	2		
		8446	+47	53	−13	47	73	1		
		8438	+81	87	−25	82	1,939	2		
		(7)		(6)	(−7)		2,569	17		

See footnotes at end of table.

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR MARCH 1947—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1947	h m		°	°	°	°				
Mar. 17	11 1	8457	−80	274	−11	80	97	1	G	Mt. Wilson.
		8456	−55	299	−19	55	48	2		
		8455	−50	304	−13	50	242	11		
		8454	−36	318	−16	37	36	4		
		8449	+20	14	−19	23	97	2		
		8452	+39	33	+22	48	24	2		
		8446	+60	54	−14	60	73	1		
		(7)		(354)	(−7)		617	23		
18	11 28	8458	−72	268	+18	76	12	1	F	U. S. Naval.
		8457	−67	273	−11	67	48	1		
		8456	−41	299	−18	42	36	1		
		8455	−37	303	−13	37	242	11		
		8449	+33	13	−19	34	73	1		
		8446	+73	53	−13	73	73	3		
		(6)		(340)	(−7)		484	18		
19	10 6	8457	−55	273	−11	55	61	1	F	Do.
		(*)	−32	296	−20	34	16	1		
		8455	−24	304	−13	25	194	1		
		8449	+47	15	−19	48	61	1		
		(4)		(328)	(−7)		332	4		
20	10 53	8461	−68	246	−22	68	48	1	G	Do.
		8457	−42	272	−11	42	48	1		
		(*)	−42	272	+19	49	24	1		
		8455	−10	304	−14	12	206	1		
		8454	+1	315	−17	11	73	11		
		(*)	+57	11	+14	60	12	1		
		8449	+60	14	−19	60	48	1		
		(7)		(314)	(−7)		459	17		
21	10 17	8463	−80	221	+20	82	242	1	G	Do.
		8462	−79	222	+16	80	97	1		
		8461	−54	247	−21	55	12	1		
		8457	−28	273	−11	28	48	1		
		8460	−21	280	−22	25	6	1		
		8459	−9	292	−19	15	24	2		
		8455	+3	304	−14	8	206	4		
		8454	+14	315	−17	17	170	18		
		8449	+72	13	−19	72	24	1		
		(9)		(301)	(−7)		829	30		
22	11 4	8466	−88	200	−12	88	194	1	F	Mt. Wilson.
		8463	−69	219	+17	71	12	1		
		8463	−67	221	+20	72	242	1		
		8462	−63	225	+15	66	24	1		
		8465	−61	227	−13	61	24	3		
		8458	−16	272	+18	31	97	12		
		8457	−14	274	−12	15	48	1		
		8459	+3	291	−18	12	24	6		
		8455	+16	304	−14	18	206	4		
		8454	+28	316	−18	30	533	24		
		(9)		(288)	(−7)		1,404	54		
23	11 5	8466	−75	200	−11	75	291	1	F	U. S. Naval.
		8463	−53	222	+20	59	218	1		
		8462	−50	225	+15	54	24	1		
		8461	−37	238	−21	39	36	3		
		8468	−20	255	−11	21	36	2		
		8458	−4	271	+19	26	24	2		
		8457	−1	274	−12	5	24	1		
		8458	+1	276	+17	24	97	1		
		8455	+30	305	−15	31	97	1		
		8454	+41	316	−18	42	388	11		
		(9)		(275)	(−7)		1,235	24		
24	12 24	8470	−68	193	+14	70	24	1	F	Do.
		8466	−60	201	−10	60	630	1		
		8463	−39	222	+20	46	242	1		
		8462	−37	224	+16	44	24	3		
		8461	−23	238	−21	26	24	3		
		8468	−7	254	−11	7	61	5		
		8458	+10	271	+18	27	24	4		
		8457	+12	273	−12	13	24	2		
		8458	+17	278	+17	30	145	1		
		8469	+20	281	+21	34	12	1		
		8467	+37	298	−8	37	97	7		
		8455	+43	304	−15	43	97	1		
		8454	+52	313	−19	52	242	8		
		8454	+60	321	−17	60	388	1		
		(12)		(261)	(−7)		2,034	39		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR MARCH 1947—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1947	h m		°	°	°	°				
Mar. 25	10 10	8470	−62	187	+17	67	24	1	F	U. S. Naval.
		8470	−55	194	+14	59	24	1		
		8466	−48	201	−10	48	630	1		
		8463	−28	221	+20	39	218	1		
		8468	+6	255	−11	7	109	10		
		8457	+25	274	−12	25	12	1		
		8458	+27	276	+17	37	109	1		
		8469	+31	280	+22	42	12	3		
		8467	+48	297	−7	48	36	4		
		8455	+56	305	−15	56	145	1		
		8454	+64	313	−19	64	145	6		
		8454	+74	323	−17	75	339	3		
		(10)		(249)	(−7)		1,803	33		
26	11 26	8473	−77	158	+14	79	97	1	F	Do.
		8472	−60	175	−22	60	97	4		
		8470	−47	188	+17	53	48	1		
		8470	−43	192	+15	48	97	5		
		8466	−34	201	−10	34	630	1		
		8463	−14	221	+20	30	218	1		
		8461	+7	242	−19	14	24	3		
		(*)	+17	252	−22	22	48	5		
		8468	+18	253	−12	19	97	1		
		8471	+20	255	+17	31	109	4		
		8458	+42	277	+17	48	121	1		
		8455	+70	305	−15	70	97	1		
		8454	+77	312	−19	77	97	3		
		(12)		(235)	(−7)		1,780	31		
27	10 24	8473	−64	158	+14	67	97	1	F	Do.
		8472	−50	172	−22	51	97	4		
		8472	−45	177	−21	46	145	1		
		8470	−35	187	+17	43	48	1		
		8470	−29	193	+14	35	121	2		
		8466	−21	201	−10	21	582	3		
		8463	−1	221	+20	27	218	1		
		8461	+19	241	−21	23	145	5		
		8468	+30	252	−12	30	73	1		
		8471	+33	255	+17	41	145	2		
		8458	+56	278	+17	60	97	1		
		8455	+84	306	−15	84	97	1		
		(10)		(222)	(−7)		1,865	23		
28	10 17	8474	−70	139	−26	70	121	4	G	Do.
		8473	−58	151	+12	60	61	3		
		8473	−55	154	+13	59	145	5		
		8472	−37	172	−23	39	97	7		
		8472	−31	178	−21	33	145	3		
		8470	−22	187	+18	33	24	3		
		8470	−15	194	+14	25	97	14		
		8466	−8	201	−10	8	582	4		
		8463	+12	221	+20	30	194	1		
		8461	+32	241	−20	34	242	10		
		8468	+43	252	−12	43	48	1		
		8471	+45	254	+17	51	48	4		
		8471	+51	260	+17	56	73	1		
		8471	+71	280	+17	74	97	1		
		(9)		(209)	(−7)		1,974	61		
29	11 53	8476	−72	123	−4	72	24	1	F	Do.
		8474	−55	140	−27	57	48	3		
		8473	−44	151	+11	47	73	2		
		8473	−39	156	+13	43	145	4		
		8472	−23	172	−23	26	194	8		
		8472	−17	178	−22	22	194	6		
		8470	−9	186	+18	28	24	2		
		8470	−3	192	+14	21	97	7		
		8470	+2	197	+14	21	73	4		
		8466	+7	202	−10	8	630	10		
		8463	+25	220	+20	36	145	1		
		8461	+45	240	−21	46	121	6		
		8471	+65	260	+16	68	97	1		
		(9)		(195)	(−7)		1,865	55		

POSITIONS, AREAS, AND COUNTS OF SUNSPOTS FOR MARCH 1947—Continued

Date	Eastern standard time	Mount Wilson group No.	Heliographic: Difference in longitude	Heliographic: Longitude	Heliographic: Latitude	Heliographic: Distance from center of disk	Area of spot or group	Spot count	Plate quality	Observatory
1947	h m		°	°	°	°				
Mar.	13 41	8478	−87	94	−24	88	388	1	P	Mt. Wilson.
		8476	−59	122	−5	59	24	1		
		8474	−41	140	−28	44	36	1		
		8475	−33	148	−39	44	73	8		
		8473	−30	151	+11	35	73	3		
		8473	−25	156	+13	31	121	7		
		8472	−7	174	−23	18	145	3		
		8472	−3	178	−22	15	291	7		
		8470	+4	185	+17	25	97	4		
		8470	+12	193	+14	24	242	6		
		8477	+15	196	+23	33	73	2		
		8466	+21	202	−10	21	582	1		
		8463	+39	220	+21	47	97	1		
		8461	+60	241	−20	60	145	1		
		8471	+78	259	+17	79	97	1		
		(12)		(181)	(−7)		2,484	47		
31	11 13	8478	−85	84	−24	85	485	3	F	U. S. Naval.
		8478	−75	94	−23	75	873	2		
		8476	−44	125	−5	44	36	1		
		8474	−27	142	−28	34	12	1		
		8475	−20	149	−39	27	97	5		
		8473	−17	152	+10	24	48	1		
		8473	−12	157	+13	23	121	10		
		8472	+6	175	−22	16	388	14		
		8470	+17	186	+19	32	97	5		
		8470	+25	194	+14	33	339	10		
		8477	+27	196	+24	41	12	1		
		8466	+34	203	−10	34	582	2		
		8463	+51	220	+20	58	194	1		
		8461	+74	243	−20	74	121	1		
		(11)		(169)	(−7)		3,405	57		

Mean daily area for 31 days=3,516
Mean 10g+s for 31 days=154.4

*Not numbered.
VG=very good; G=good; F=fair; P=poor.

PROVISIONAL RELATIVE SUNSPOT NUMBERS FOR MARCH 1947

[Dependent on observations at Zurich Observatory and its stations at Locarno and Arosa]

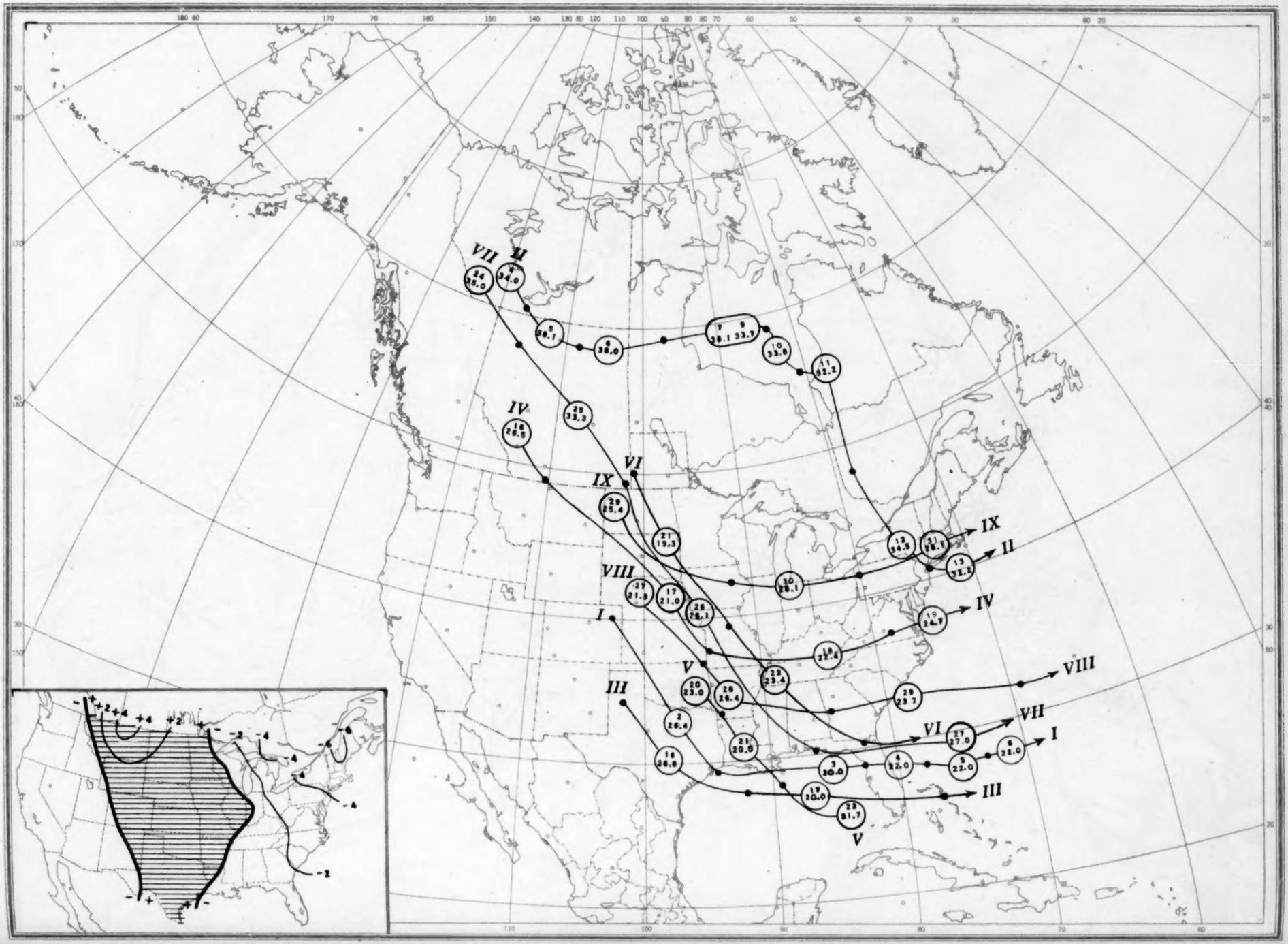
March 1947	Relative numbers	March 1947	Relative numbers	March 1947	Relative numbers
1	103	12	164	23	121
2	134	13	150	24	115
3	106	14	118	25	114
4	163	15	92	26	112
5	165	16	76	27	130
6	198	17	59	28	124
7	208	18	46	29	138
8	210	19	34	30	137
9	212	20	57	31	151
10	194	21	85		
11	206	22	91		

Mean, 31 days=129.8

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, March 1947

Chart I. Departure (°F.) of the Mean Temperature from the Normal, and Wind Roses for Selected Stations, March 1947

Chart II. Tracks of Centers of Anticyclones, March 1947. (Inset) March Departure of Monthly Mean Pressure from Normal

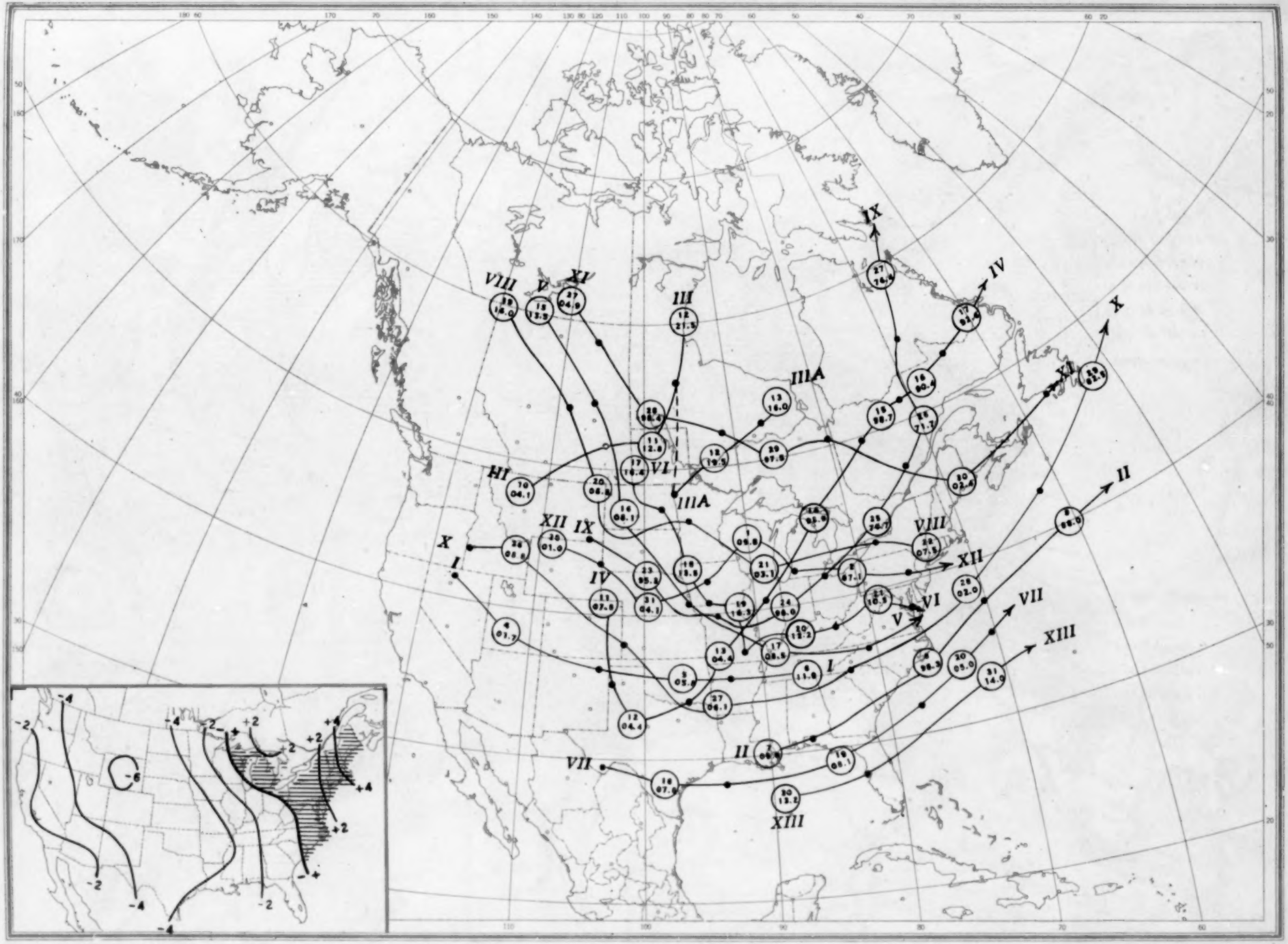


Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, March 1947. (Inset) Change in Mean Pressure from Preceding Month

Circle indicates position of anticyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of anticyclone at 7:30 p. m. (75th meridian time)

Chart III. Tracks of Centers of Cyclones, March 1947. (Inset) Change in Mean Pressure from Preceding Month



Circle indicates position of cyclone at 7:30 a. m. (75th meridian time), with barometric reading. Dot indicates position of cyclone at 7:30 p. m. (75th meridian time)

Chart IV. Percentage of Clear Sky Between Sunrise and Sunset, March 1947

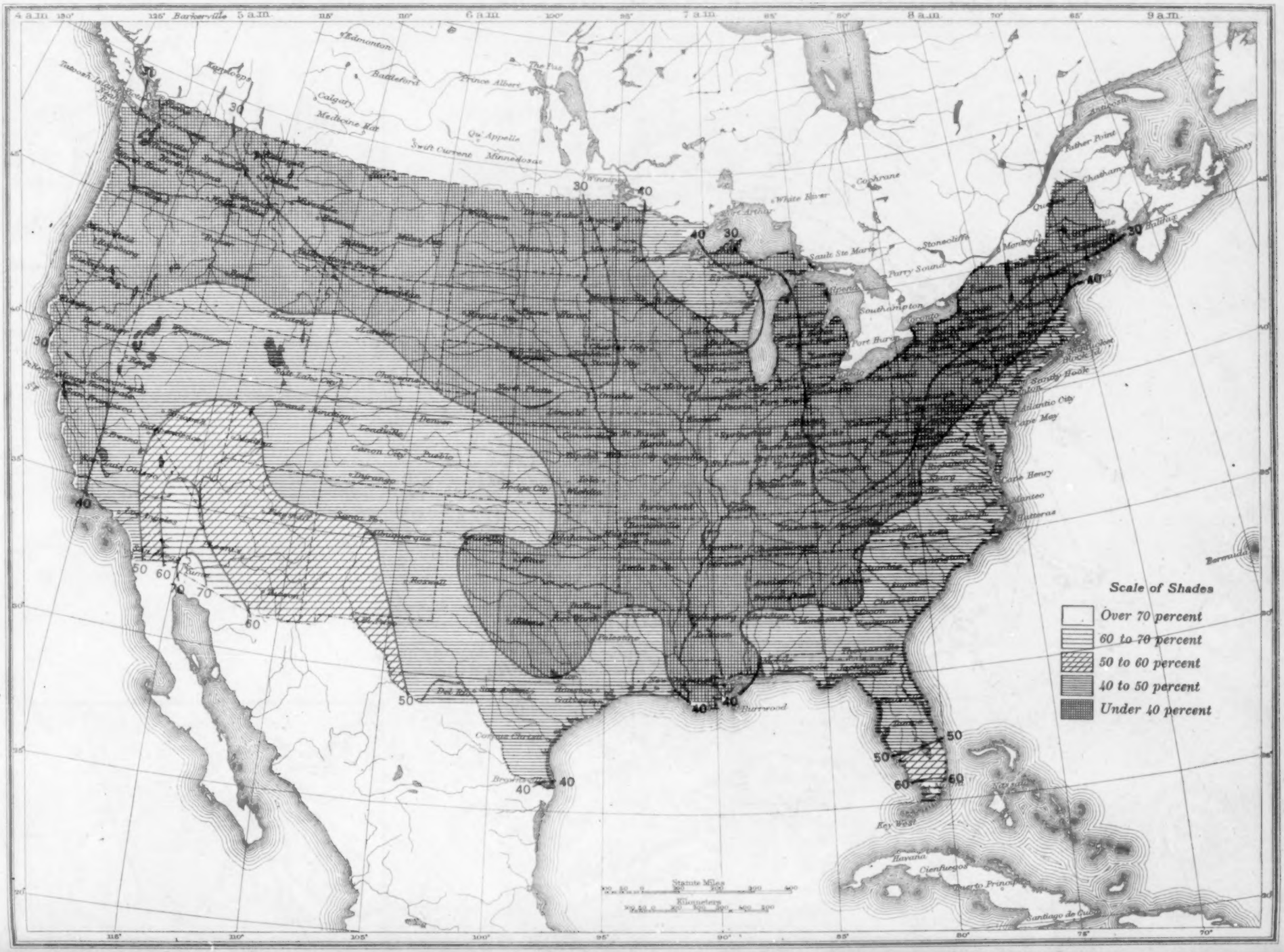


Chart V. Total Precipitation, Inches, March 1947. (Inset) Departure of Precipitation from Normal

Chart V. Total Precipitation, Inches, March 1947. (Inset) Departure of Precipitation from Normal

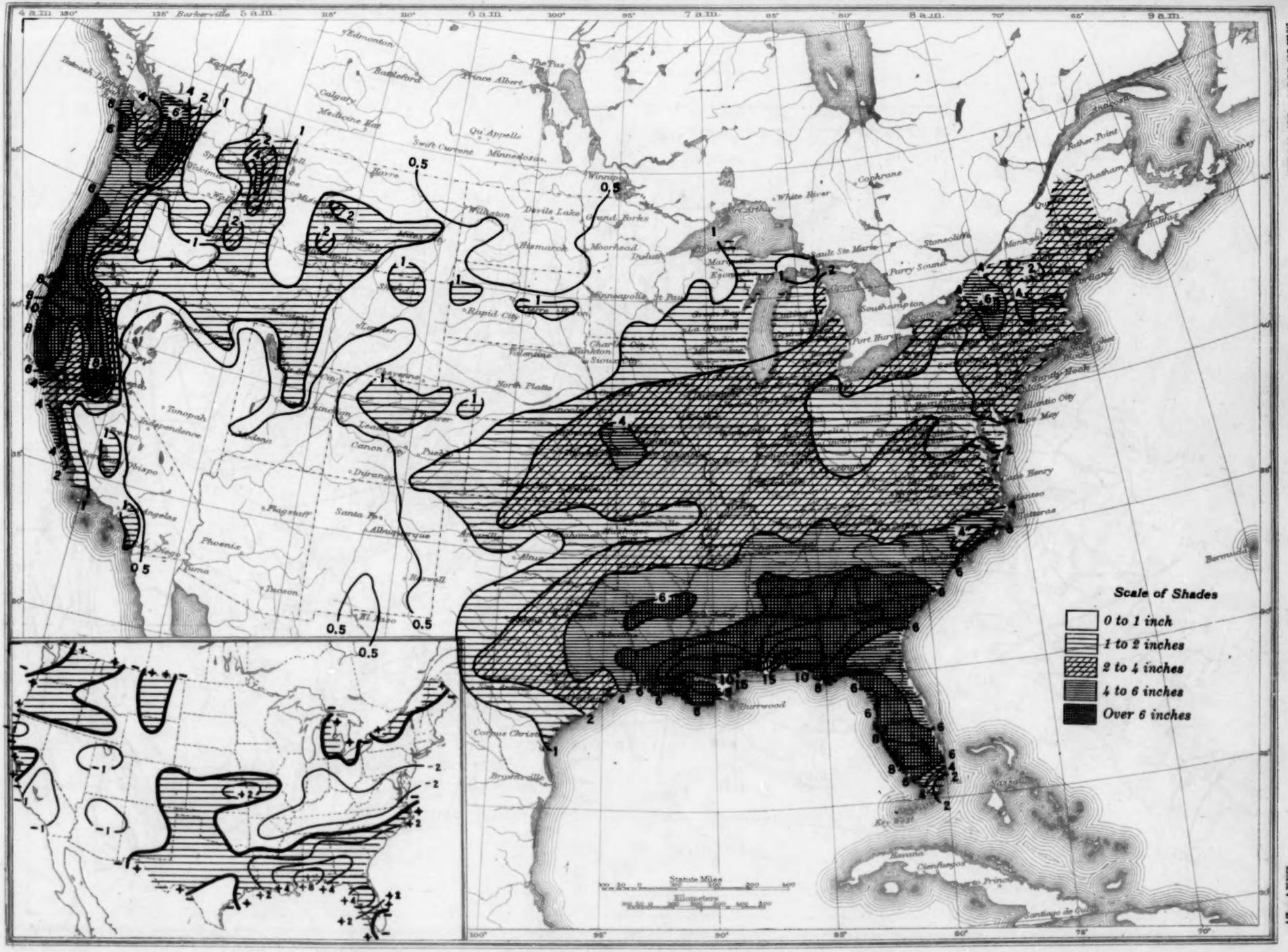


Chart VI. Isobars (mb.), at Sea Level and Isotherms (°F.) at Surface; Prevailing Winds, March 1947

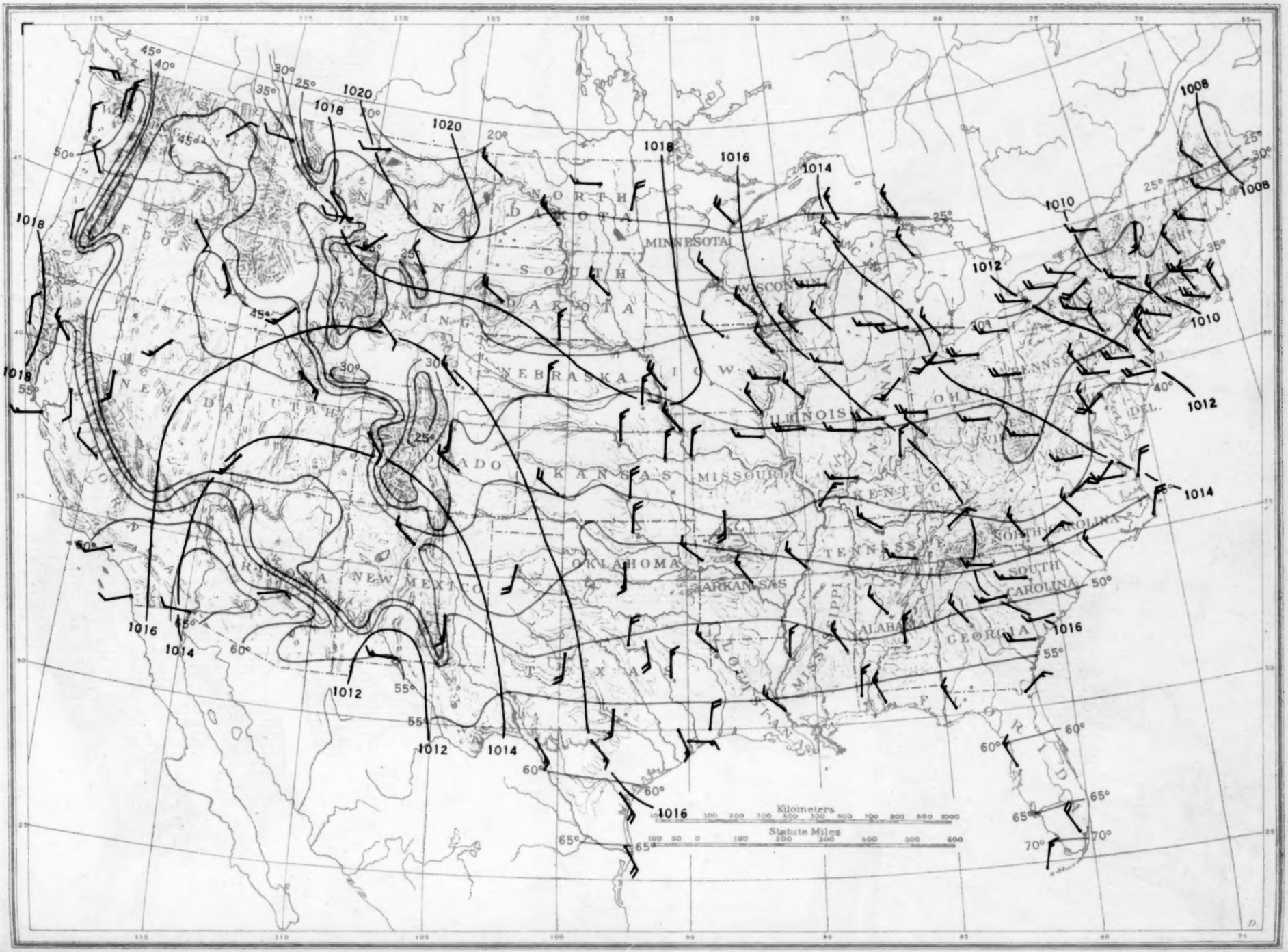


Chart VII. Total Snowfall, Inches, March 1947. (Inset) Depth of Snow on the Ground at 7:30 p. m., Monday, March 31, 1947

Chart VII. Total Snowfall, Inches, March 1947. **(Inset) Depth of Snow on the Ground at 7:30 p. m., Monday, March 31, 1947**

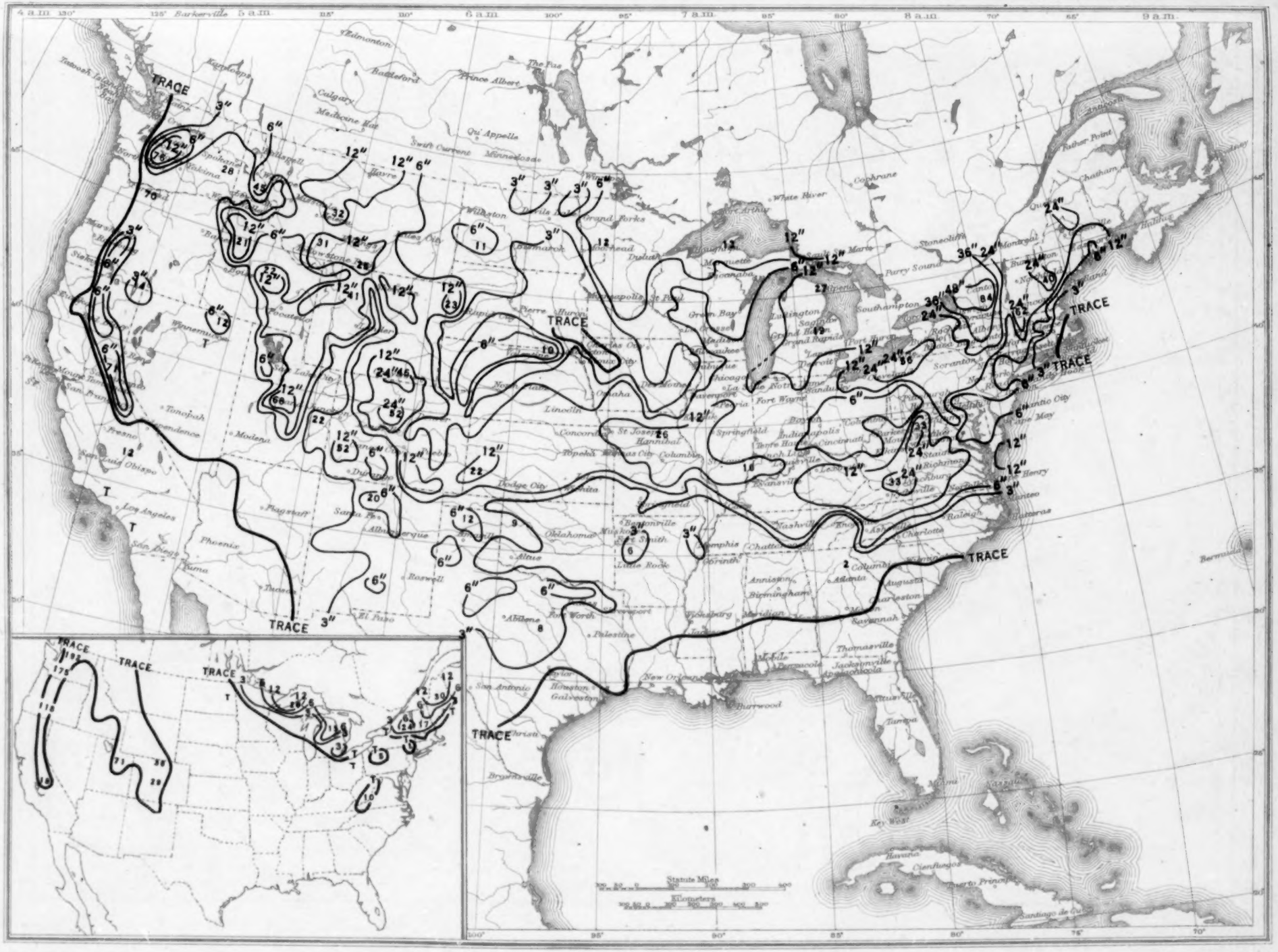
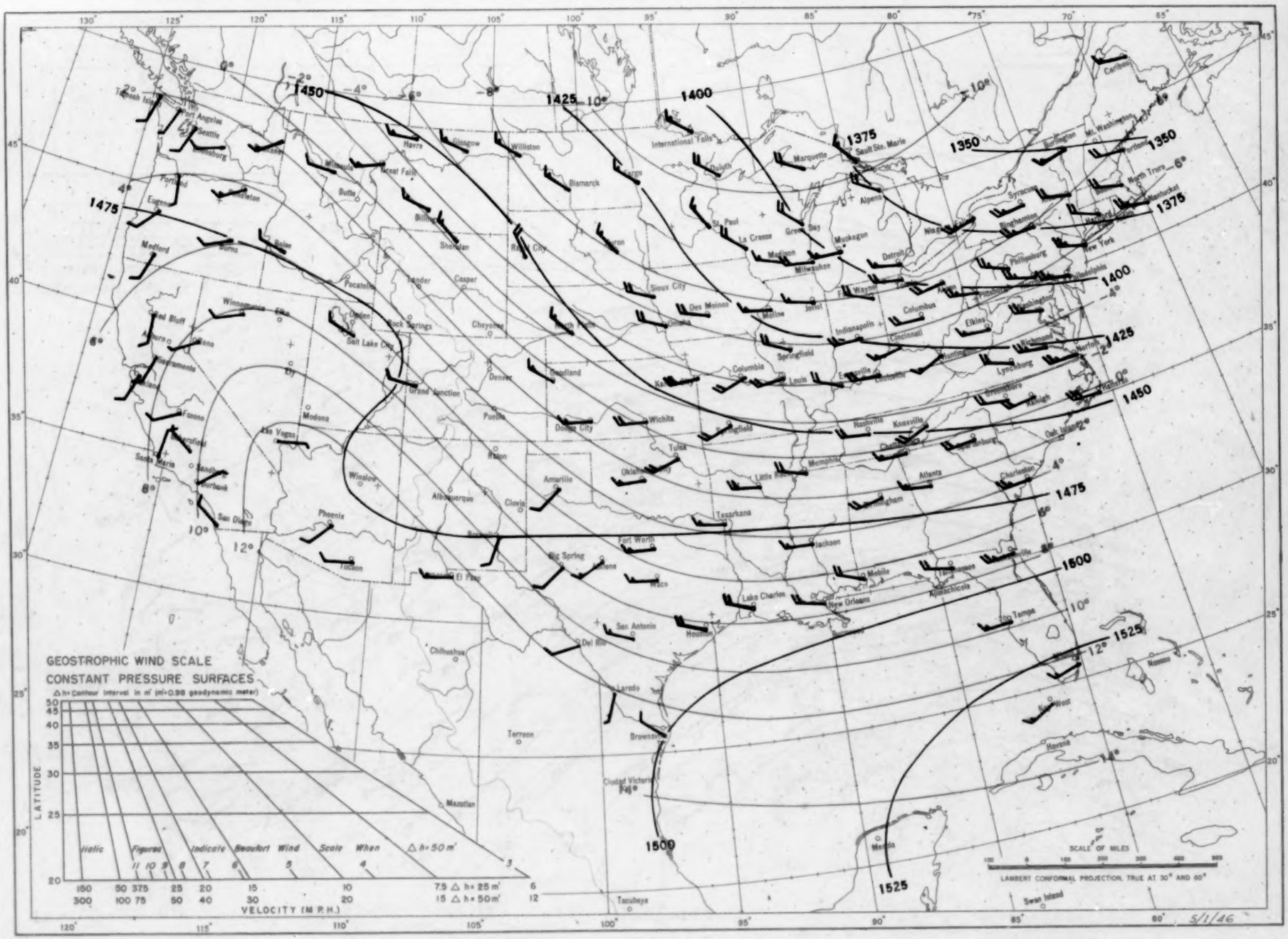


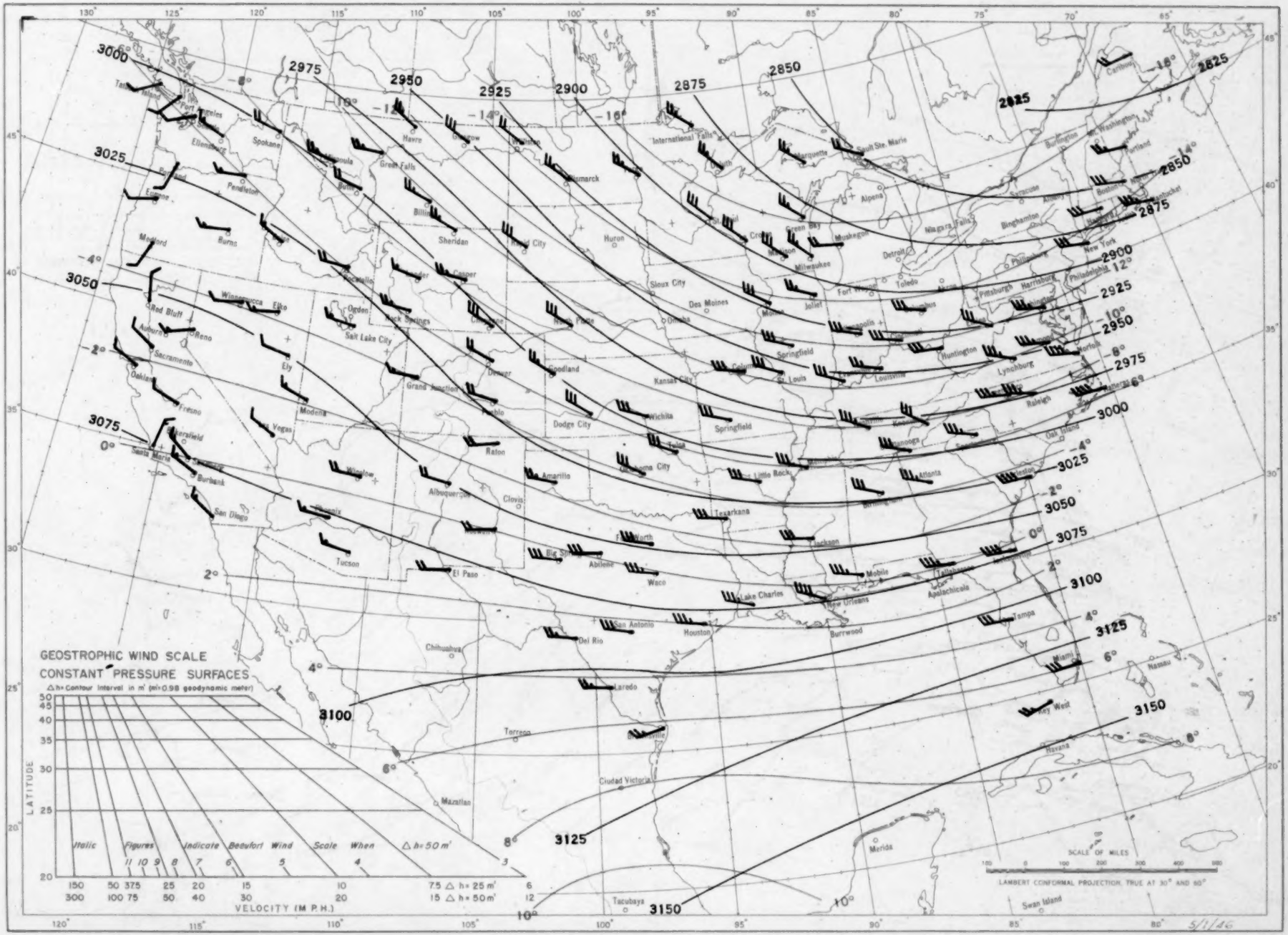
Chart VIII. March 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in

Chart VIII, March 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 850-millibar Pressure Surface, and Resultant Winds at 1,500 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

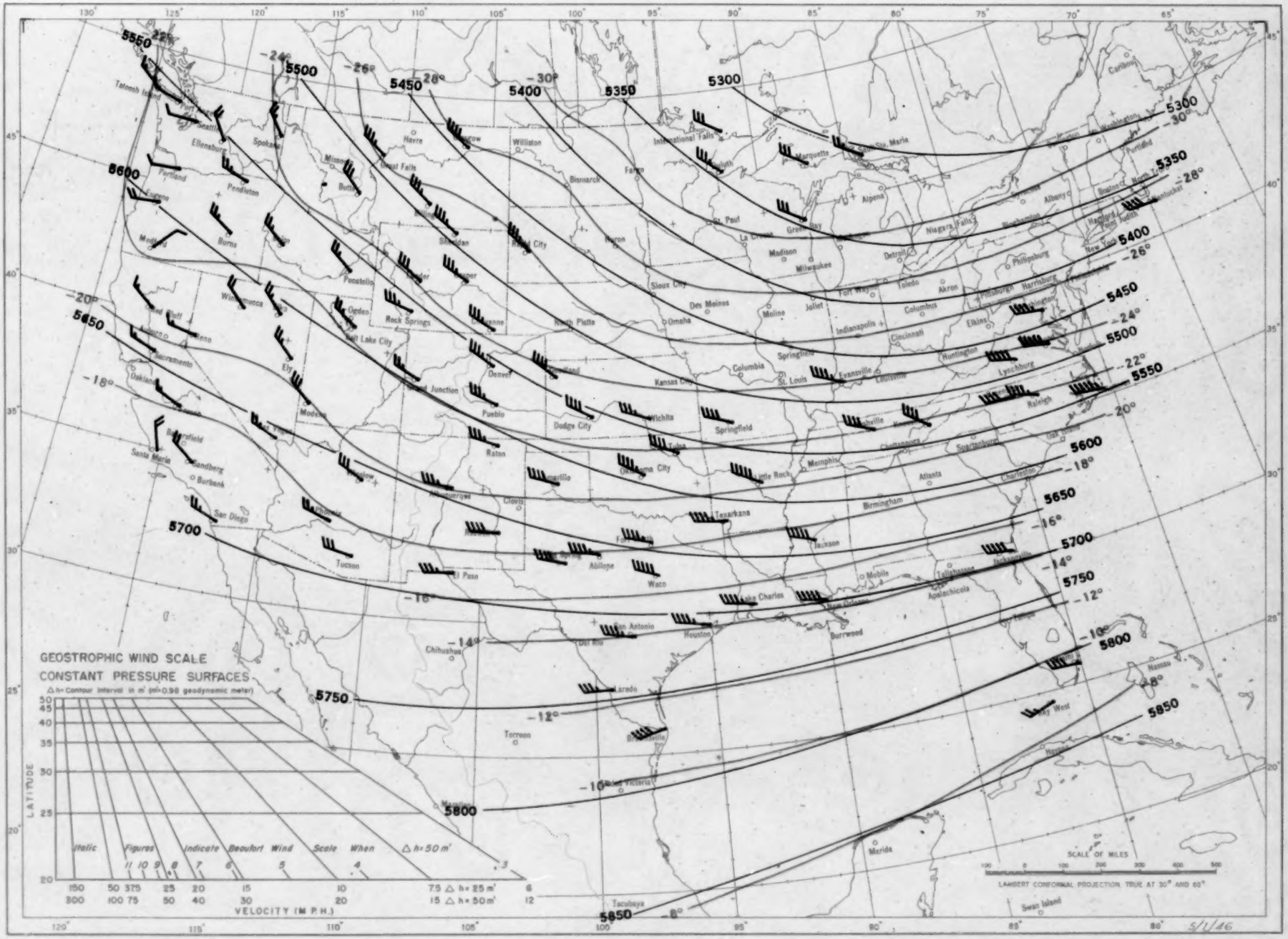
Chart IX, March 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 700–millibar Pressure Surface, and Resultant Winds at 3,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

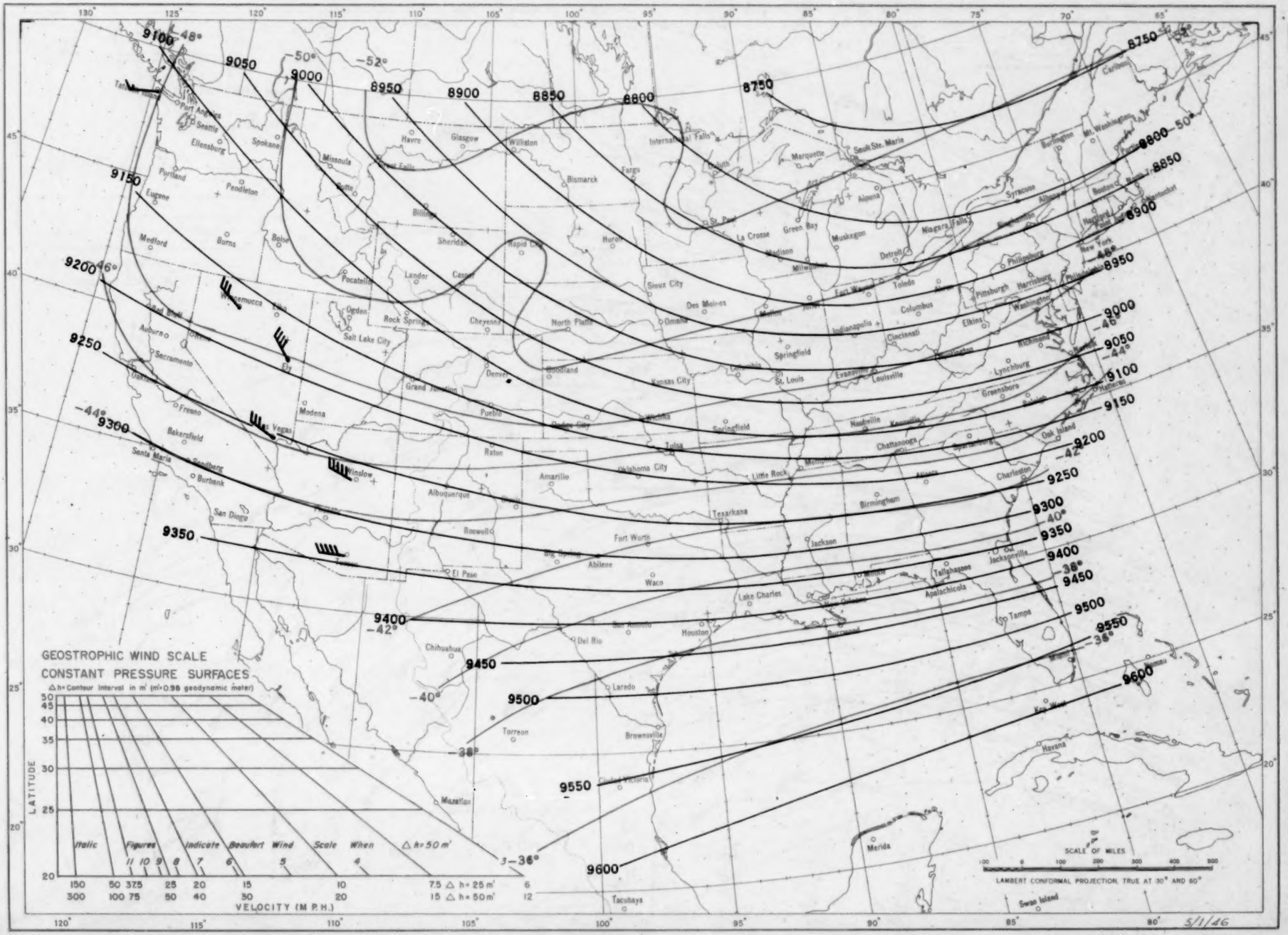
Chart X, March 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in

Chart X, March 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 500–millibar Pressure Surface, and Resultant Winds at 5,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.

Chart XI, March 1947. Contour Lines of Dynamic Height (Geopotential) in Units of 0.98 Dynamic Meters and Isotherms in Degrees Centigrade for the 300–millibar Pressure Surface, and Resultant Winds at 10,000 Meters (m.s.l.)



Contour lines and isotherms based on radiosonde observations at 0300 G.C.T., and winds based on pilot balloon observations at 2200 G.C.T.